Nikola Tesla

MEMORABILIA

Volume I

C
O
P
Y

Excerpt from WAA
Region II, Radio Unit
Broadcast over Station WHN,
6:45 PM, April 13, 1947

Reynolds:

I have told you of the many success stories taken from our files of veterans whom the War Assets Administration has set up into little businesses of their own, or supplied them with the tools necessary to their employment by others, and also of the merchandise sold to them for resale.

Here is an interesting item. We had a call from a Miss Muriel Arbus.... If you met Miss Arbus at a cocktail party or a church festival you would never dream that she was anything other than an attractive, charming young lady devoting her life to pleasant pursuits. But ah.... now comes the surprise.... the lovely Miss Arbus, in private life, is actually a machine tool dealer in New York City. Further contact with her discloses that she is a veritable dynamo of energy. It is common sight to see her prowling among machines at the WAA sales and warehouses, making her inspections and picking up various items which she wants to buy for resale. She has been an assistant to the President of an engineering company and has encompassed also the field of electricity. And now she is dealing with contractors and manufacturers of all types of machinery for shipment to the Far East, personally supervising the packing and crating for overseas shipping. This astonishing young lady is also expert in figuring cost and price systems from blue prints and she now is operating the Arbus Machine Tools Sales Company and she has a backlog of orders with the WAA of a quarter of a million dollars. If by chance you should see the dim outline of a small feminine figure in the wee, small hours of the morning, heading a line waiting for the doors to open for an advertised WAA machine tool sale, your guess that it is Muriel Arbus will probably be right....

December 29/56

Dear Leland:

I have some very sad news to relate – Dorothy Skerritt died on Thursday, Dec. 27 at her sister's home in Cliffside Park, N. J. She will be buried on Monday, Dec. 31st. She had pneumonia, was in the hospital under an oxygen tent and seemed to be getting better, so she came home to her sister's with a nurse. Wednesday she went into a coma and died peacefully in her sleep Thursday. The Dr. said she had a punctured liver. That leaves only *me* remaining. I called Kenneth today and told him. I am going to the funeral parlor tomorrow in Cliffside Park to see her and her family.

MURIEL ARBUS (b. Sept. 5, 1886; d. Feb. 6, 1970) was Tesla's secretary (with Dorothy Skerritt) during the teens and mid-1920's.

Photo courtesy R. Schwank

(Miss Arbus + D. Skerritt)

Began course in Accounting with

Mr. Scharff. October 30, 1915. (1915)

October - 30

November - 6

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December - 4

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January - 22 - 1916

29

February - 5

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- 2 -

She leaves two married sisters, the one with whom she lived, Mrs. Marjorie Purcell and another, Mrs. Frances LeCoque, who lives in the vicinity I believe.

I also lost my darling nephew on Thursday the 27th who was in a horrible plane crash with eight other boys while in training in alaska. I am very much filled with grief. The boy was only 20 years of age. While all this was taking place another nephew's son of ten months was being baptized in N.J. at 3 P.M. in a church chapel.

Life plays queer tricks it seems, but we must leave it all in His hands.

— 3 —

I also take this opportunity to thank you for the very splendid Bibliography of Mr. Nikola Tesla. It seems you have left out nothing. Should have acknowledged it before but with the Christmas rush it was impossible to do so.

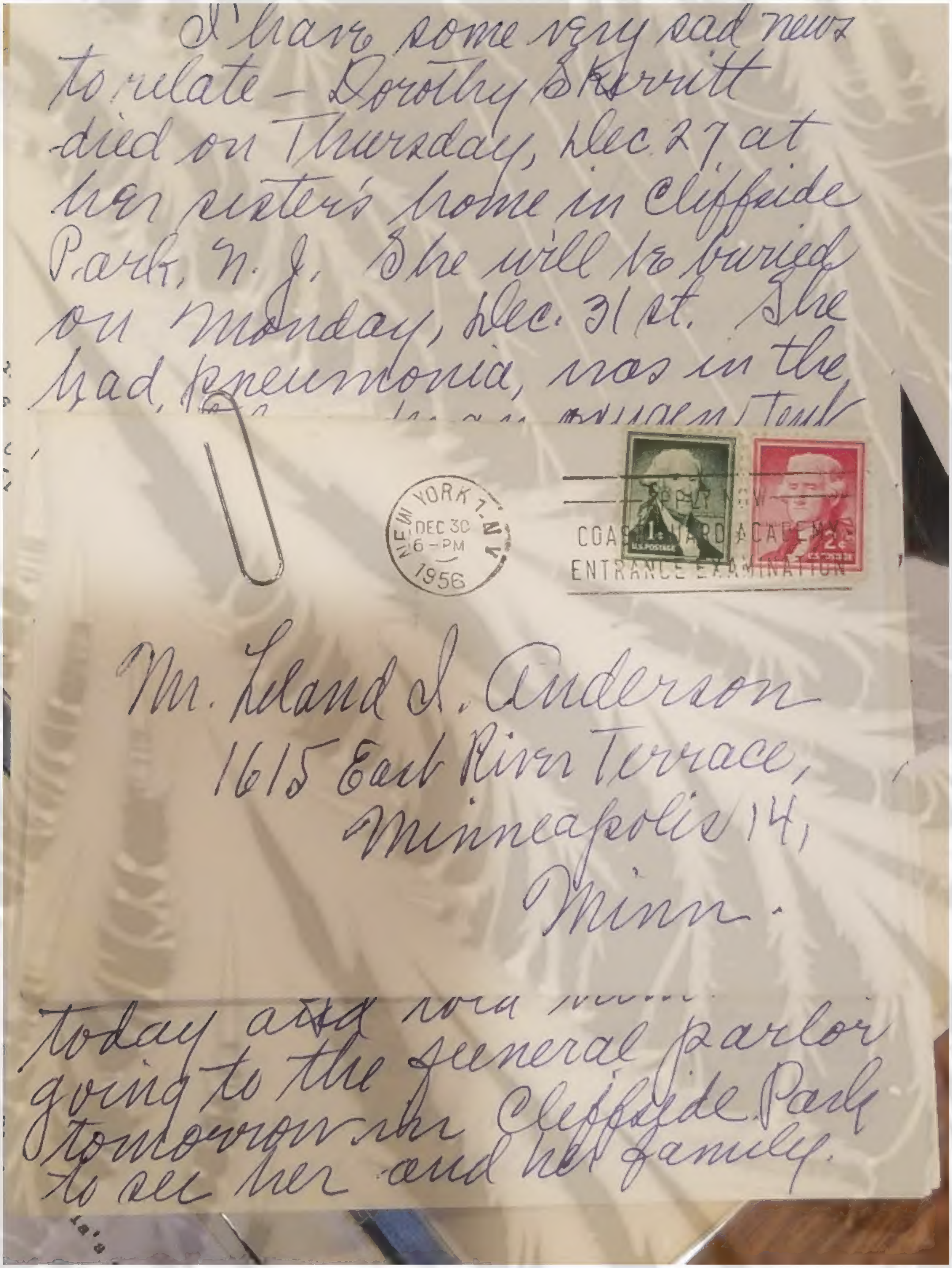
Wishing you and yours the most Healthy, Happy and Prosperous New Year, and with kind regards—

Sincerely yours.

Muriel Arbus

P.S. Believe you also know that Mr. Tesla's nephew, Sava N. Kosanovich died a short time ago. I got this information from Kenneth. He had been ill a long time.

M.A.



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NEW YORK 1, N.Y.
DEC 30
6-PM
1956

COAST GUARD ACADEMY
ENTRANCE EXAMINATION

Mr. Leland I. Anderson
1615 East River Terrace,
Minneapolis 14,
Minn.

today and told ...
going to the funeral parlor
tomorrow in Cliffside Park
to see her and her family.

DOROTHY F. SKERRITT (b. ________________; d. Dec. 27, 1956) was Tesla's secretary (with Muriel Arbus) during the teens and mid-1920's and is shown here on the steps of the New York Public Library (across the street from his offices at 8 W. 40th St.) where whe was often sent to research some question.

Photo courtesy L. Anderson

in front of N.Y. Public Library

Ivan Mestrovic 517 Livingston Avenue Syracuse 10, New York Telephone 75-1170

October 19,1953

Mr.Leland I.Anderson
127 Seymour Avenue Southeast
Minneapolis 14, Minnesota

Dear Mr.Anderson,

I received your letter of September 17,1953 in connection with your efforts to establish an organization in the United States in honor od Dr.Nikola Tesla. I apologize for not answering sooner but I was extremely busy these last few weeks.

Nikola Tesla was a friend of mine and I admired and respected him greatly. I agree with you that it is a shameful iniquity that his fame here in the United States has been eclipsed in recent years. Therefore I am pleased to hear of your efforts to form an organization in his honor.

I assure you that I am interested in the formation of the organization in honor Nikola Tesla.

Very truly yours,

I Mestrovic

IVAN MESTROVIC
UNIVERSITY OF NOTRE DAME
COLLEGE OF ARTS & LETTERS
NOTRE DAME, INDIANA

November 6, 1956

Mr. Leland I. Anderson
1615 East River Terrace
Minneapolis 14, Minn.

Dear Mr. Anderson:

Thank you for your letter of October 27, with the enclosed account of yours,celebrating the centennial of Nikola Tesla. Your letter was adressed to Syracuse N.Y. where I was before my comming to Notre Dame , Ind. I am here already one year as professor at the Fine Arts Department/

I was very sorry not have been able to attend the Centennial Observence in Chicago where was honored my great countryman and friend the genius Nikola Tesla. As you can imagine I am very busy with my work , and consider saying of German poet Goethe: Art is long and life is short.

I paid tribute to Nikola Tesla by making a bust of him one for Vienna and one for the Yugoslave Academy in Zagreb.

A few weeks ago I finished a heroic statue of Nikola Tesla which will be placed as pendant to Rudjer Boskovic the great croatian scientist by the Rudjer Boskovic Institute in Zagreb.

As you can see dear Mr. Anderson we are both honoring the memory of our mutual friend , each one in a different way.

Sincerely yours,

Ivan Mestrovic.

[illegible]
BULLETIN ABOUT YUGOSLAVIA
September, 1959

Sculptor Meštrović Visits His Native Land

After many years spent abroad (Switzerland and the United States), sculptor Ivan Meštrović, one of the greatest artistt of our times, was on a long visit to Yugoslavia this summer He visited Zagreb, where he **toured** the galleries and talked with sculptors and painters. Later, accompanied by his wife and son, he stayed several days on the Island of Brioni as the guest of President Tito. While in Split, he paid a visit to a gallery known by h[illegible] name and housed in [illegible] he had presented to [illegible] State in 1955 Exhibited in this gallery are many of the works he made bef[illegible] the Second World W[illegible] as well as some pieces [illegible] he carved in the [illegible]stwar period — all presented to Yugoslavia In [illegible], his birthplace, the sculptor celebrated his 76th birthday in the company of friends and relatives on August 15.

[illegible] Meštrović came to Yugoslavia to meet his re[illegible] and friends He was [illegible] did so. He did not

He expressed his regret for being unable to visit all the parts of the country. "I would like to see the whole country," he said. "I would like to pay a visit to Beograd, but I cannot do so now. I hope I will do so on my next visit".

In a talk with reporters Meštrovic expressed himself favourably about the works of contemporary Yugoslav sculptors and painters. "I have had an opportunity to see some of them, others I know by reproductions. I visited many studios in Zagreb. They are all good. In my opinion, young Yugoslav sculptors are talented. Some of them are among the best". He particularly praised sculptors Kršinic and Stijovic and painters Lubarda and Čelebonović Discussing younger artists, he said that they were talented and bold.

In the last few years Meštrović has made many public monuments for Yugoslavia. The most important of them is, no doubt, the mausoleum to Njegoš

K. L. Andersen
1615 E. River Terrace
Minneapolis 14
Minn.

A MERRY CHRISTMAS

AND

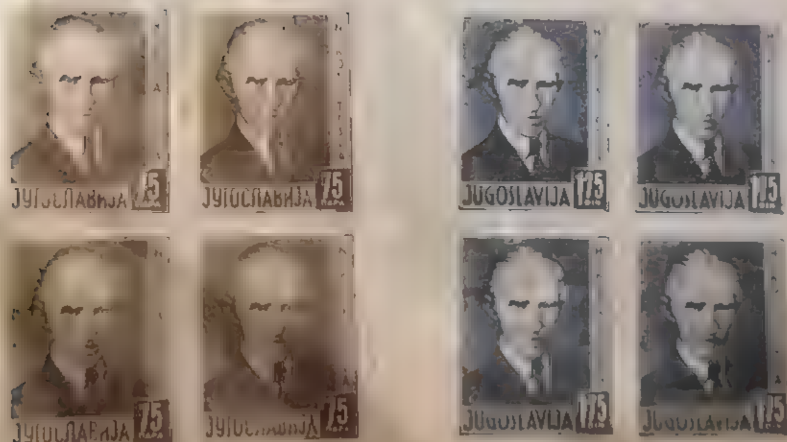
A HAPPY NEW YEAR

MR. AND MRS. IVAN MESTROVIC

...and friends. He was ... of them is no doubt,
and he did so. He did not the mausoleum to ...


NIKOLA TESLA
1856-1956
Prvi dan - 10 VII 1956 - First Day Cover
JUGOSLAVIJA

NIKOLA TESLA COMMEMORATIVE ISSUES



1936; 80ieth Anniversary

1953; Decennial Anniversary TRIESTE

Nikola Tesla *by Ivan Mestrovic*

ALEXANDAR B. DAMIANOVITCH

INGÉNIEUR IMLg ET ESE

PROFESSEUR À L'UNIVERSITÉ DE BEOGRAD

DOYEN DE LA FACULTÉ ÉLECTROTECHNIQUE

Happy 1955

[illegible] [illegible] ux pour 1958

ALEXANDAR B. DAMIANOVITCH

Ingenieur IMLg et ESE
Professeur à l'Université de Beograd
Secrétaire du Comité National „Nikola Tesla"


BEOGRAD


MUZEJ
NIKOLE TESL

TESLA CENTENNIAL COMMEMORATIVE ISSUES (Yugoslav)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50
JUGOSLAVIJA

1956 — CENTENAIRE DE NAISSANCE DE NIKOLA TESLA

84th CONGRESS
2d SESSION

S. 2910

IN THE SENATE OF THE UNITED STATES

JANUARY 12, 1956

Mr. THYE introduced the following bill; which was read twice and referred to the Committee on Post Office and Civil Service

A BILL

To provide for the issuance of a special series of stamps in commemoration of the one hundredth anniversary of the birth of Doctor Nikola Tesla.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Postmaster General is authorized and directed to prepare for issue, on as early a date as practicable during the year 1956, a special series of postage stamps, of such appropriate design and of such denomination as he shall prescribe, in commemoration of the one hundredth anniversary of the birth of Doctor Nikola Tesla, the eminent electrical engineer whose many inventions so greatly contributed to the advancement of science and industry in the United States.

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By Mr. THYE

JANUARY 12, 1956

Read twice and referred to the Committee on Post Office and Civil Service


NIKOLA TESLA
Join Serb Nat ona Federat on argest Serbian Orgar zat on in the United States of Amer ca and Canada
Donat ons be appl ed to the Tesla Memorial Fund

SOUTHERN ILLINOIS UNIVERSITY
CARBONDALE ILLINOIS

[illegible]

...derstand they will ... $1.50

... as the total ...

[illegible]

STOGODIŠNJICA
RODJENJA
NIKOLE TESLE
1856 - 1956

CENTENAIRE
DE LA NAISSANCE
DE
NIKOLA TESLA
1856 - 1956

PROVISIONAL PROGRAMME

NIKOLA TESLA CENTENARY CELEBRATIONS TO BE HELD IN YUGOSLAVIA, JULY 1956

The Celebration of the Hundredth Anniversary of the Birth of Nikola Tesla will take place in Yugoslavia from July 10 to 21, 1956, under the patronage of the President of the Republic Marshal Tito

In addition to the unveiling of the monument and memorial tablet to Nikola Tesla and the official Commemoration and scientific lectures which will be held from July 10 to 13 1956 the celebrations in Beograd will include social gatherings visits to museums and institutes and excursions From July 14 to 21, visits to large electro-industrial enterprises and to touristic centres and regions in Yugoslavia will be organized

The celebrations are being organized by the State Committee for the Celebration of the Centenary of Nikola Tesla's Birth, the Chairman of which is Mr Rodoljub Colakovic Vice-President of the Executive Council of the FPR of Yugoslavia

A. CELEBRATIONS IN BFOGRAD

Monday July 9

09 [illegible] meeting of delegates and members accompanying them [illegible] [illegible]

Tuesday July 10

09 30 a.m. Official Commemoration opened by the Chairman of the State Committee Mr Rodoljub Čolaković Speech by the Secretary of the State Committee Professor Al Damianović Speeches by foreign and Yugoslav delegates followed by a concert.

12,30 p.m Departure by bus for Avala. Visit to the Tomb of the Unknown Warrior Lunch offered by the People's Committee of the City of Beograd

08,30 p m Performance at the National Theatre

Wednesday, July 11

09,00 a.m Unveiling of Nikola Tesla's Monument. Visit to the Museum of Nikola Tesla and unveiling of the Memorial Tablet

11,45 a m. Official reception in honour of the delegates

01,00 p.m Lunch offered by the State Committee in honour of the delegates

04 45 - 07,45 p m Scientific and technical lectures. For the ladies accompanying the delegates a special programme is planned.

08 30 p.m. Evening sail on the Danube.

Dear Mr. President:

A number of American friends have brought it to my attention that you are leading the [illegible] organization in your country on [illegible] for the celebration of the centenary of the birth of the [illegible] Croatian-American inventor, Nikola Tesla. I would like to join with you in honoring his memory and his work.

I think that we can both personally recall the years when electricity was not yet a daily commonplace and when few of us could even imagine the electrical wonders with which our world is now blessed. It is fortunate, indeed, that even then, there were a few scientists of great genius and power, like Nikola Tesla, who were willing to devote their lives to [illegible] technological revolutions for the benefit of all of their fellow men.

One might say that it is only the accident of Tesla's birth and schooling in Yugoslavia and the circumstance of his [illegible] to the United States which [illegible] our two nations together on this worthy occasion. [illegible], however, [illegible] the historical truth that Tesla is also a symbol of the universality of [illegible] human strivings for progress in peace, which mean so much to the peoples of both Yugoslavia and the United States.

Sincerely yours,

His Excellency
Josip Broz-Tito,
President of the Federal People's
Republic of Yugoslavia,
Belgrade.


LUFTPOST
PAR AVION
UNIVERSITETETS INSTITUT
FOR
TEORETISK FYSIK
KØBENHAVN Ø
DANMARK


Prof. Niels Bohr
LUFTPOST
PAR AVION
Anderson
River Terrace

GL CARLSBERG
COPENHAGEN

April 10, 1958.

Mr. [illegible] I. Anderson
[illegible] River Terrace
Minneapolis 14, Minnesota.

Dear Mr. Anderson,

On his return to Copenhagen from a longer stay in the United States, Professor Niels Bohr asks me to thank you for your letter addressed to him on August 6, 1957, together with your memento on Nikola Tesla in which he was greatly interested. The talk on "Atoms and Human Knowledge" was delivered by Professor Bohr on the occasion of the Tesla Centenary without manuscript. Somewhat later, the address has been elaborated further and we are sending you under separate cover a typescript of it. At the same time, we want to draw your attention to the fact that the text is also included in the collection of Professor Bohr's recent papers, which has just appeared with the title "Atomic Physics and Human Knowledge" published by John Wiley and Sons, New York.

Sincerely,

S. Hellmann.

S. Hellmann
secretary.

Niels Bohr

Niels Bohr

Atoms and Human Knowledge *)

[illegible]

*) Except for certain points which have been elaborated, [illegible] the author's address [illegible] delivered without manuscript [illegible] Congress, July [illegible].


Niels Bohr

The exploration of the world of atoms which this century has brought has hardly any parallel in the history of science as regards progress in knowledge and mastery of that nature of which we ourselves are part. However, with every increase in knowledge and possibilities is connected a greater responsibility, and the fulfillment of the rich promises and the elimination of the new dangers involved in the atomic age confront our whole civilization with a most serious challenge, which can be met only by cooperation of all people, resting on a mutual understanding of the human fellowship. For the hope to bridge divergencies caused by differences in people's living conditions and history, it is of importance that science, which knows no national borders and whose achievements are common possession, through the ages has united men in striving to clarify the foundation of our knowledge. As I shall try to show, the studies of atoms, which were to entail such great consequences, and whose progress has rested on a world-wide cooperation, have not only deepened our insight in a new domain of experience, but have also placed general problems of knowledge in a new light.

At first it might perhaps seem surprising that atomic science should contain a lesson of general charatcer, but we must remember that in all stages of its development it has concerned profound problems of knowledge. Thus, already thinkers in antiquity, by assuming a limit for the divisibility of substances, attempted to find a basis for understanding the features of permanency exhibited by natural phenomena in spite of all

multifariousness and variability. Even if, during the development of physics and chemistry in the Renaissance, atomic ideas became more and more fruitful, it was right up until this century a widespread opinion that one had here to do with a hypothesis. Thus, it was taken for granted that our sense organs, themselves composed of practically innumerable atoms, were much too coarse to observe the smallest parts of matter. This situation was, however, to become essentially changed by the great discoveries at the turn of the century and, as is well known, progress in experimental technique made it possible to record directly effects of single atoms and to obtain information about the more elementary particles composing the atoms themselves.

Notwithstanding the deep influence exerted by ancient atomism on the development of the mechanical conception of nature, it was, however, the study of immediately accessible astronomical and physical experience which made it possible to trace the regularities expressed in so-called classical physics. With Galileo's program, according to which the account of phenomena must be based on measurable quantities, one succeeded in liberating oneself from comparisons with feelings of strain when we move and with motives for our actions, which had so long hindered the rational formulation of mechanics. Thus, in Newton's principles, one found the foundation of a deterministic description permitting, from the knowledge of the state of a physical system at a given moment, ~~to~~ the prediction of the state at any subsequent time. Along such lines, it was also possible to account for electromagnetic phenomena. This required, however, that the description of the state of the system include, besides the po-

sitions and velocities of the electrified and magnetized bodies, the strength and direction of the electrical and magnetic forces at every point of space at the given moment.

The conceptual framework characterising classical physics was long thought to provide the right tool for the description of all physical phenomena and not least was it suited to utilise and develop atomic ideas. Of course, for systems such as ordinary bodies which are composed of an enormous number of constituents, there could be no question of an exhaustive description of the state of the system. Without abandoning the deterministic ideal, it became possible, however, on the basis of the principles of classical mechanics, to deduce statistical regularities reflecting many properties of bodies. Even if the mechanical laws of motion permit a complete reversal of the course of the single processes, the characteristic feature of irreversibility in heat phenomena found a full explanation in the statistical energy equilibrium resulting from the interaction of the molecules. This great extension of the application of mechanics further emphasized the indispensability of atomic ideas in the description of nature and opened the first possibilities of counting the atoms of the substances.

The clarification of the foundation of the laws of thermodynamics was, however, to open the way to the recognition of a feature of wholeness in atomic processes far beyond the old doctrine of the limited divisibility of matter. As is well known, it was the closer analysis of the phenomena of heat radiation which became the test of the scope of classical physical ideas. The discovery of electromagnetic waves had already provided a

basis for an understanding of the propagation of light, permitting in great measure an explanation of the optical properties of substances, but the endeavours to account for the radiation equilibrium confronted such ideas with insurmountable difficulties. Just the circumstance that one had here to do with arguments based on general principles and quite independent of special assumptions regarding the constituents of the substances led Planck, in the first year of this century, to the discovery of the universal quantum of action which showed clearly that the classical physical description is an idealization of limited applicability. In phenomena on the ordinary scale the actions involved are so large compared to the quantum that this can be left out of consideration. However, in proper quantum processes, we meet regularities which are completely foreign to the mechanical conception of nature and which defy pictorial deterministic description.

The task with which Planck's discovery confronted the physicists was nothing less than, through a thorough analysis of the presuppositions for the application of our most elementary concepts, to provide room for the quantum of action in a rational generalization of the classical physical description. During the development of quantum physics, entailing so many surprises, we have time after time been reminded of the difficulties of orienting ourselves in a domain of experience so far from that to whose description our means of expression are adapted. The rapid progress has been made possible by a wide and intensive collaboration between physicists from many countries, whose diverse approach has helped in a most fruitful way to bring the

problem into ever sharper focus. At this occasion, of course, it will not be possible to deal in detail with individual contributions, and as a background for the following considerations I shall only remind you briefly of some of the main features of the development.

While Planck cautiously limited himself to statistical arguments and emphasized the difficulties, in a more detailed description, of abandoning the classical foundation, Einstein - in the same year that he gave the framework of classical physics such harmonious completion in establishing the theory of relativity - daringly pointed to the necessity of taking the quantum of action into account in individual quantum phenomena. In particular he showed that the description of observations regarding photoelectric effects requires that the transmission of energy to each of the electrons expelled from the substances just corresponds to the absorption of a so-called radiation quantum. As there could be no question, however, of simply replacing with a picture of particles the idea of waves indispensable for the account of the propagation of light, one was here confronted with a peculiar dilemma, the solution of which was to require a thorough analysis of the scope of pictorial ideas.

As is well known, this question was further accentuated by Rutherford's discovery of the atomic nucleus which, despite its minuteness, contains almost the whole mass of the atom and whose electrical charge corresponds to the number of electrons in the neutral atom. On the one hand, one got a simple picture of the atom immediately suggesting the application of mechanical and electromagnetic ideas. On the other hand, it was clear that,

according to classical physical principles, no configuration of electrical particles will possess a stability necessary for the explanation of the physical and chemical properties of the atoms. In particular, according to classical electromagnetic theory, every motion of the electrons around the atomic nucleus would give rise to a continual radiation of energy implying a rapid contraction of the system until the electrons became united with the nucleus into a neutralparticle of dimensions vanishing relatively to those which must be ascribed to the atoms. In the hitherto entirely incomprehensible empirical laws for the line spectra of the elements, one got however a hint as to the decisive importance of the quantum of action for the stability and radiative reactions of the atoms.

The point of departure became here the so-called quantum postulate, according to which every change in the energy of an atom appears as the result of a complete transition between two of its stationary states. By further assuming that all atomic radiative reactions involve the emission or absorption of a single light quantum, it became possible to determine from the spectra the energy values of the stationary states. Evidently, within the framework of a deterministic description, the explanation of the indivisibility of the transition processes and their appearance under given conditions was excluded. However, by means of the so-called correspondence principle, according to which, through a comparison with the classically expected course of the processes, one looked for directives for a statistical generalization of the description compatible with the quantum postulate, it was possible to get a survey of electron bindings

in the atoms which reflected many properties of the substances. Still, it became more and more clear that, in order to obtain a consistent account of atomic phenomena, it was necessary to renunciate to a still higher degree the use of pictures and by a radical reformulation of the whole description to provide room for all features implied by the quantum of action.

The solution which was reached through ingenious contributions from many of the most eminent theoretical physicists ot our time was surprisingly simple. Just as in the formulation of relativity theory, adequate tools were found in highly developed mathematical abstractions. The quantities which in classical physics are used to describe the state of a system are replaced in the quantum mechanical formalism by symbolic operators whose commutability is limited by rules containing the quantum. This implies that quantities such as positional coordinates and corresponding momentum components of particles cannot simultaneously be ascribed definite values. Just in this way the statistical character of the formalism appears as a natural generalization of the description of classical physics. This generalization further permitted a consequent formulation of regularities which limit the individuality of identical particles and which, like the quantum itself, cannot be expressed in customary physical pictures.

By means of the quantum mechanical methods it was possible within a few years to account for a large domain of experience regarding the physical and chemical properties of substances. One succeeded not only in clarifying in detail the binding of electrons in atoms and molecules, but also in obtaining deep

insight into the constitution and reactions of atomic nuclei. In this connection we may mention that the early discovered probability laws for the spontaneous radioactive transmutations have been harmoniously incorporated in the statistical quantum mechanical description. Also as regards the properties of the new elementary particles which in the last years have been observed in the study of transmutations of atomic nuclei at high energies, continual progress has been obtained by adapting the formalism to the invariance requirements of relativity theory. Still, we are here confronted with new problems the solution of which obviously demands further abstractions suited to combine the quantum of action with the elementary electric charge.

In spite of the fruitfulness of quantum mechanics within such a wide domain of experience, the renunciation of accustomed demands on physical explanation has caused many physicists and philosophers to doubt that we are here dealing with an exhaustive description of atomic phenomena. In particular the view has been expressed that the statistical mode of description must be regarded as a temporary expedient which, in principle, ought to be replaceable by a deterministic description. The thorough discussion of this question has however led to that clarification of our position as observers in atomic physics which has given us the epistemological lesson referred to in the beginning of this lecture.

As the goal of science is to augment and order our experience, every analysis of the conditions of human knowledge must rest on considerations of the character and scope of our

means of communication. The basis is here, of course, the language developed for our orientation in the surroundings and for the organization of human communities. With the increase of experience, however, the question raised itself repeatedlyas to the sufficiency of the concepts and ideas incorporated in daily language. Because of the relative simplicity of physical problems, they are especially suited for the investigation of the use of our means of communication, and just through the development of atomic physics we have been taught how, without leaving common language, it is possible to create a framework sufficiently wide for an exhaustive description of new experience.

In this connection it is imperative to realize that, in every account of physical experience, one must describe experimental conditions as well as observations by the same means of communication which are used in classical physics. In the analysis of single atomic particles, this is made possible by irreversible amplification effects - such as a spot on a photographic plate left by the impact of an electron, or an electric discharge created in a counter device - and the observations concern only the information thus gained as to where and when the particle is caught on the plate or its energy at the arrival at the counter. Of course, this information presupposes knowledge of the position of the photographic plate relative to the other parts of the experimental arrangement, such as regulating diaphragms and shutters, defining space time coordination, or electrified and magnetized bodies which determine the external force fields acting on the particle and permit energy measure-

ments. The experimental conditions can be varied in many ways, but the point is that in each case we must be able to communicate to others what we have done and what we have learned, and that therefore the functioning of the measuring instruments must be described within the framework of classical physical ideas.

As all measurements thus concern only bodies which are sufficiently heavy to permit in their description the neglect of the quantum, there is strictly speaking no new observational problem in atomic physics. The amplification of atomic effects, which makes it possible to base the account on measurable quantities and which gives the phenomena a peculiar closed character, only emphasizes the irreversibility characteristic of the very concept of observation. While, within the frame of classical physics, there is no difference in principle between the description of the measuring instruments and the objects under investigation, the situation is, however, essentially different regarding quantum phenomena. Not only does the question of the stability and individuality of the objects themselves point to a limitation of the idea of well defined atomic systems, but even within the large domain of experience where this idea can be upheld, the quantum of action imposes restrictions on the description of the state of the systems by means of space time coordinates and momentum energy quantities. Since the deterministic description of classical physics rests on the assumption of an unrestricted compatibility of space time coordination and dynamical conservation laws, we are here obviously confronted with the problem of whether, as regards atomic objects, such a description can be fully retained.

The clarification of this main point was furthered especially by reference to the role of the interaction between objects and measuring instruments in the description of quantum phenomena. Thus, as pointed out by Heisenberg, the quantum of action implies that locating an object in a limited space time domain involves an exchange of momentum and energy, being the greater the smaller the domain chosen, between instrument and object. It was therefore of utmost importance to investigate to what extent such interaction entailed in observation can be separately taken into account in the description of phenomena. This question has been the focus of much discussion, and many proposals aiming at complete control of all interactions have appeared. In such considerations, however, due regard is not taken to the fact that the very account of the functioning of the measuring instruments involves that any interaction, implied by the quantum, between these and the atomic objects be inseparably entailed in the phenomena.

Indeed, every experimental arrangement permitting the registration of an atomic particle in a limited space time domain demands fixed measuring rods and synchronized clocks which, according to their definition, exclude control of momentum and energy transmitted to them. Conversely, any unambiguous application of dynamical conservation laws in quantum physics requires that the description of the phenomenon in question involves a renunciation in principle as regards detailed space time coordination. This mutual exclusion of the experimental conditions necessary for the application of the ~~e~~elementary concepts implies that the whole experimental arrangement must be taken into account

in the well defined description of the phenomena. In this connection, the indivisibility of quantum phenomena finds its consequent expression in the circumstance that every definable subdivision would require a change of the experimental arrangement with the appearance of new individual phenomena. Thus, the very foundation of a deterministic description has disappeared and the statistical character of the predictions is evidenced by the fact that observations corresponding to different possible individual processes will in general appear under the same experimental conditions.

Such considerations have not only clarified the already mentioned dilemma regarding light propagation, but have also completely solved the corresponding paradoxes brought up by later development regarding pictorial representation of the behaviour of material particles. Here, of course, we cannot seek a physical explanation in the customary sense, but only that removal of any apparent contradiction which is all we can demand in a new field of experience. However great the contrasts exhibited by atomic phenomena obtained under different experimental conditions, such phenomena must be termed complementary in the sense that each of them is well defined and that together they exhaust all definable knowledge about the objects din question. The quantum mechanical formalism, aiming directly at a comprehension of observations obtained under experimental conditions described by simple physical concepts, just gives an exhaustive complementary account of a very large domain of experience. The renunciation of visualizable pictures involves only the state of atomic objects, while the foundation for the description of the experiment-

al conditions, as well as our freedom to choose these, is fully retained. The whole formalism, whose application is well defined only as regards closed phenomena, must in all such respects be considered a rational generalization of classical physics.

In view of the influence of the mechanical conception of nature on philosophical thinking, it is understandable that in various circles the notion of complementarity has been regarded as entailing a reference to the subjective observer incompatible with objectivity of scientific description. Of course, in every field of experience we must retain a sharp separation between the observer and the content of the observations, but we must realize that the discovery of the quantum of action has thrown new light on the very foundation of the description of nature and revealed hitherto unnoticed presuppositions for the rational use of the concepts on which the communications of experience rest. In quantum physics, as we have seen, an account of the functioning of the measuring instruments is indispensable for the definition of phenomena and we must, so-to-say, draw the separation between subject and object in a way which in each single case secures the unambiguous application of the elementary physical concepts used in the description. Far from containing any mysticism foreign to the spirit of science, the notion of complementarity points to the epistemological conditions in our position as regards description and comprehension of experience in atomic physics.

Just as in earlier progress in physics, the lesson received through the development of atomic science regarding general conditions of human knowledge has naturally given rise to renewed

consideration of the use of our means of communication for object-ive description in other domains of experience. Notlleast, the particular emphasis on the observational problem raises the quest-ion of the position of living organisms in the description of na-ture and of our own situation as thinking and acting beings. Even if, within the frame of classical physical ideas, it was possible to a certain extent to compare organisms to machines, it was clear that such comparisons did not properly recognize many of the cha-racteristics of life, and the inadequacy of the mechanical con-ception of nature, as regards the account of man's situation, found expression particularly in the difficulties entailed in the primitive distinction between soul and body.

The problem with which we are here confronted are obvious-ly connected with the fact that the description of many aspects of human existence demands a terminology not immediately resting on simple physical pictures. However, just the recognition of the limited applicability of such pictures in the account of atomic phenomena gives a hint as to how, confronted with the pro-blemsof biology and psychology, we shall comprehend experience within the frame of an objective description. As before, it is here important in each single case to be aware of the separation between the observer and the content of the communications. While, in the mechanical conception of nature, the subject-object sepa-ration was fixed, room for a wider description is provided by the different placings of such a separation entailed in the conditions for the consequent use of concepts.

Without attempting any exhaustive definition of organic life, we may say that a living organism is characterized by its

integrity and adaptability, which implies that the description of internal functions of an organism and its reaction to external stimuli often requires the word purposeful, foreign to physics and chemistry. Even if the results of atomic physics have found multifarrious applications in biophysics and biochemistry, the closed individual quantum phenomena exhibit, of course,no feature suggesting the notion of life. As we have seen, the description of atomic phenomena, exhaustive within a wide domain of experience, rested on the free use of the measuring instruments necessary for the well defined application of the elementary concepts. In a living organism, however, such a distinction between measuring instruments and objects under investigation can hardly be fully carried through and we must be prepared that every experimental arrangement aiming at a description, well defined in the sense of atomic physics, of the functioning of the organism, will be incompatible with the display of life.

In biological research, references to features of wholeness and purposeful reactions of organisms are used along with the ever more detailed information on their structure and regulatory processes that has brought such great progress not least in the field of medicine. We have here to do with a practical approach to a field where the means of expression used for the description of its various aspects refer to mutually exclusive conditions of observation. In regard to attitudes termed mechanistic and finalistic, it must be realized that we are not dealing here with contradictory viewpoints, but with a feature of complementarity connected with our position as observers of nature. In order to avoid misunderstanding, it is essential however to

note that - in contrast to the account of atomic regularities implied by the quantum of action - the description of organic life and the evaluation of its possibilities of development cannot, of course, aim at any completeness, but only at sufficient width of description.

In the account of psychical experiences we meet with conditions of observation and corresponding means of expression which are still more removed from the terminology of physics. Quite apart from the extent to which it is necessary and justifiedto use words like instinct and reason in the description of the behaviour of animals, the word consciousness, applied to oneself as well as to one's fellow beings, is indispensable in the description of the human situation. While the terminology adapted to orientation in the environment could take as its starting point simple physical pictures and ideas of causality, the account of states of our mind, since the origin ~~xx~~ of language, required a typical complementary mode of description. Indeed the use of words like thoughts and feelings does not refer to a firmly connected causal chain, but to experiences which exclude each other because they are conditioned by different separations between the conscious content and the background which we loosely term ourselves.

Especially instructive is the relation between experience of the feeling of volition and conscious pondering on motives for action. The indispensability of such apparently contrasting means of expression in the description of the richness of conscious life strikingly reminds us of the way in which elementary physical concepts are used in atomic physics. In such a comparison, however,

we must recognize not only that psychical experiences cannot be subjected to physical measurements, but that, moreover, the very concept of volition, far from referring to a generalization of deterministic description, from the outset aims at the possibilities of life. Without entering into the old philosophical discussion of the freedom of the will, I shall only remind you that in the objective description of our situation the use of the word will corresponds closely to that of words like hope and responsibility equally indispensable in human communication.

We have here reached problems which touch human fellowship and where the multifariousness of the means of expression is conditioned by the impossibility of characterizing, by any fixed separation, the role of the individual in the society. In view of the contrasts regarding established traditions, as well as their forms of expression, exhibited by human cultures developed under different conditions of life, one can, in a certain sense, call such cultures complementary. However, we are here in no way dealing with such definite mutually exclusive features as those we meet in the objective description of general problems of physics and psychology, but with differences in attitude, which can be appreciated or ameliorated by extended intercourse between peoples. In our time, when the increase of our knowledge and possibilities more than ever links the fate of all people, international collaboration in science has far reaching tasks which may be furthered not least by the reminiscence of general conditions of human knowledge.

SUMMARY

of the [illegible]

[illegible] research on [illegible] among them. [illegible] great foresight, [illegible] the world over, and tran[illegible]

[illegible] name of Nikola [illegible] the 1890's while he [illegible] on the occasion of [illegible] he was honoured by the leading members of the sc[illegible] hundreds of men who have achi[illegible] following the way indicated by Tesla, met [illegible] in Belgrade. Scores of papers [illegible] all of [illegible] on Tesla's research.

Tesla belong[illegible] able to nolerrnole[illegible] first strike into an [illegible] field. [illegible] of this scientis[illegible] indicating the [illegible] pproach was thor[illegible] engineering project. [illegible] of years of [illegible]

Nikola Tesla was [illegible] July 1856, in small [illegible] constant [illegible] very [illegible]

His impatience kept him wandering from Graz to Budapest and then on to Vienna and Paris, until he finaly became [illegible]

[illegible] to Thomas Edison by his former employer Director Pikm . The letter was short and to the point:" I know only two great men. One is Edison and the other is this young man whom I recommend to you"...

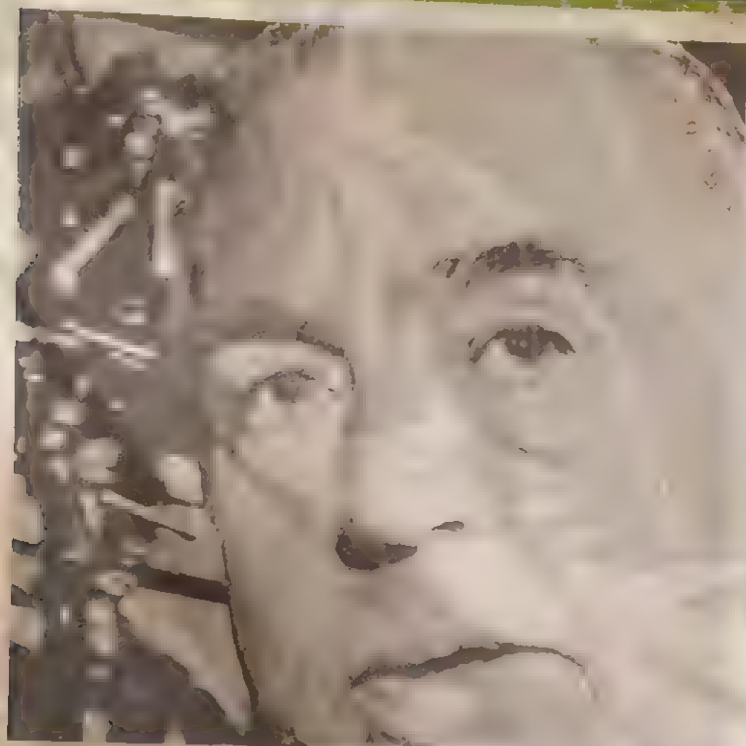
[illegible] association with Edison continued till 18[illegible] [illegible]. During this period [illegible] most important associate, working [illegible] and perfecting at the same time [illegible] which brought light to streets of [illegible]...

[illegible] well equipped workshop, he found [illegible] full ability. Within [illegible] the basis for the poly- [illegible] as the only practical [illegible] of electrical energy, thus [illegible] resources of hydro-electric [illegible].

[illegible]

[illegible] electrical [illegible]. Besides [illegible] polyphase system, which created new motors and generators, and new methods of transmission of [illegible] energy, he invented wireless transmission including [illegible] and high frequency alternator, and remote control [illegible] radio waves. He did a great deal of work on [illegible], often experimenting first on himself. He [illegible] endless numbers of instruments and [illegible] frequency motors, regulators, transformers, [illegible] [illegible] electrical engineering book.

Tesla did not have a time to live any private life. He never had any friends because he did not have time for



THE WORLD OF WILEY

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The Unity of Human Knowledge Niels Bohr

The question alluded to in the title for this address is as old as civilization itself, but has acquired renewed attention in our days with the increasing specialization of studies and social activities. From various sides concern has been expressed with the widespread confusion arising from the apparently divergent approaches taken by humanists and scientists to human problems, and in this connection there has even been talk about a cultural rift in modern society. We must, however, not forget that we are living in times of rapid developments in many fields of knowledge, reminiscent in such respect of the age of European Renaissance.

However great the difficulties of liberation from the medieval world view were felt at that time, the fruits of the so-called Scientific Revolution are certainly now a part of the common cultural background. In our century the immense progress of the sciences has not only greatly advanced technology and medicine but has at the same time given us an unsuspected lesson about our position as observers of that nature of which we are part ourselves. Far from implying a schism between humanism and physical science, this development entails a message of importance for our attitude to common human problems, which — as I shall try to show — has given the old question of the unity of knowledge new perspective.

The pursuit of scientific inquiry with the aim of augmenting and ordering our experience of the world around us has through the ages proved fertile, not least for the continual progress of technology which to so great an extent has changed the frame of our daily life. While early developments of astronomy, geodesy, and metallurgy in Egypt, Mesopotamia, India, and China were primarily directed to serve requirements of the community, it is in ancient Greece that we first meet with systematic endeavours to clarify the basic principles for the description and ordering of knowledge.

In particular, we admire the Greek mathematicians, who in many respects laid the firm foundation on which later generations have built. For our theme it is important to realize that the definition of

Comment

Half a century ago, Dr. Niels Bohr opened the way for a theory of matter that explained, in the words of Dr. P. A. M. D[illegible] "most of physics and all of chemistry." To this Dr. J. Robert Opp[illegible] has added "and therefore all of life." The theory [illegible] began in 1913 with Dr. Bohr's explanation of the hydro[illegible] along with the theory of relativity, one of the great [illegible] thought in the first half of the twentieth century.

Although his research opened the door to the splitting of the atom, Dr Bohr was always sensitive to the terrible destructive capacity of the atomic bomb. He urged that nations leave off the manufacturing of such bombs in time of peace and adopt a system of international control of atomic energy. He was a leader in the effort to establish an international nuclear research center in Geneva. Former President Eisenhower said of him: "Seldom has a man dedicated himself more single-mindedly to the search of knowledge for the benefit of mankind than has Dr. Bohr in his half century as a scientist and teacher." Albert Einstein described him thus: "Personally, Bohr is one of the most amiable colleagues I have met. He utters his opinions like one perpetually groping and never like one who believes himself to be in possession of definite truth."

We at Wiley were honored last year when the late Dr. Bohr's son, himself a distinguished scientist, wrote us asking whether we were interested in publishing a posthumous collection of his father's essays. We had served as publisher to Dr. Bohr on an earlier occasion; we were pleased to do so again. This issue of the WORLD OF WILEY carries an essay from Niels Bohr's latest book. I am hopeful you will find it valuable reading.

W Bradford Wiley

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Paul Rosbaud, consultant to several [illegible] publishing houses and the first recipient of the Tate Medal of the American Institute of Physics, died in London on January 25, 1963 at the age of 68.

Dr. Rosbaud spent a long and fruitful career as a scientific editor. He had an unusual ability to stimulate the authors which, together with his charming and unassuming personality, made him instrumental in the creation of many great books, handbooks and journals.

In 1956 Dr. Rosbaud became European editor for Interscience Publishers.

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Graphic Standards, pub[illegible] Wiley in 1933, and now in its [illegible] edition

The Unity of Human Knowledge

(Cover story continued)

mathematical symbols and operations is based on simple logical use of common language. Mathematics is therefore not to be regarded as a special branch of knowledge based on the accumulation of experience, but rather as a refinement of general language, supplementing it with appropriate tools to represent relations for which ordinary verbal expression is imprecise or too cumbersome.

In view of the apparent remoteness of mathematical abstractions often frightening wider circles, it may be noted that even elementary mathematical training allows school disciples to see through the famous paradox of the race between Achilles and the tortoise. How could the fleet-footed hero ever catch up with and pass the slow reptile if it were given even the smallest handicap? Indeed, at his arrival at the starting point of the turtle Achilles would find that it had moved to some further point along the race track, and this situation would be repeated in an infinite sequence. I need hardly remind you that the logical analysis of situations of this type was to play an important role for the development of mathematical concepts and methods.

From the beginning, the use of mathematics has been essential for the progress of the physical sciences. While Euclidean geometry sufficed for Archimedes' elucidation of fundamental problems of static equilibrium, the detailed description of the motion of material bodies demanded the development of the infinitesimal calculus on which the imposing edifice of Newtonian mechanics rests. Above all, the explanation of the orbital motion of the planets in our solar system, based on simple mechanical principles and the law of universal gravitation, deeply influenced the general philosophical attitude in the following centuries and strengthened the view that space and time as well as cause and effect had to be taken as *a priori* categories for the comprehension of all knowledge.

The extension of physical experience in our days has, however, necessitated a radical revision of the foundation for the unambiguous use of our most elementary concepts, and has changed our attitude to the aim of physical science. Indeed, from our present stand-point physics is to be regarded not so much as the study of something *a priori* given, but rather as the development of methods for ordering and surveying human experience. In this respect our task must be to account for such experience in a manner independent of individual subjective judgment and therefore objective in the sense that it can be unambiguously communicated in the common human language.

As regards the very concepts of space and time reflected in the primitive use of words as here and there, and before and after, it is to be remembered how essential the immense speed of light propagation, compared with the velocities of the bodies in our neighbourhood, is for our ordinary orientation. However, the surprise that it proved impossible even by the most refined measurements to ascertain, in laboratory experiments, any effect of the orbital motion of the earth around the sun, revealed that the shape of rigid bodies and their mutual distances would be differently perceived by observers swiftly moving relative to each other, and that even events, which by one observer would be judged as simultaneous, by another could be reckoned as occurring at different moments. Far from giving rise to confusing complications, the recognition of the extent to which the account of physical experience depends on the standpoint of the observer proved most fertile in tracing fundamental laws valid for all observers.

Indeed, the general theory of relativity, by which Einstein in renouncing all ideas of absolute space and time gave our world picture a unity and harmony surpassing any previous dreams, offered an instructive lesson as regards the consistency and scope of plain language. Although the convenient formulation of the theory involves mathematical abstractions as four-dimensional non-Euclidean geometry, its physical interpretation rests fundamentally on every observer's possibility of maintaining a sharp separation between space and time and of surveying how any other observer, in his frame, will describe and coordinate experience by means of the common language.

New fundamental aspects of the observational problem, entailing a revision of the very foundation for the analysis of phenomena in terms of cause and effect, were to be uncovered by the development initiated by Planck's discovery of the universal quantum of action in the first year of this century. In fact, this discovery proved that the wide applicability of so-called classical physics rests entirely on the circumstance that the action involved in any phenomena on the ordinary scale is so large that the quantum can be completely neglected. In atomic processes, however, we meet with regularities of a novel kind, defying causal pictorial description but nevertheless responsible for the peculiar stability of atomic systems on which all properties of matter ultimately depend.

In this new field of experience, opened by modern refinements of the art of physical experimentation, we have met with many great surprises and even been faced with the problem of what kind of answers we can receive by putting questions to nature in the form of experiments. Indeed, in the account of ordinary experience it is taken for granted that the objects under investigation are not interfered with by the observation. It is true that when we

(continued on page 12)

The Unity of Human Knowledge

Continued

look at the moon in a telescope we receive light from the sun reflected from the moon-surface, but the recoil from this reflection is far too small to have any effect on the position and velocity of a body as heavy as the moon. If, however, we have to do with atomic systems, whose constitution and reactions to external influence are fundamentally determined by the quantum of action, we are in a quite different position.

Faced with the question of how under such circumstances we can achieve an objective description, it is decisive to realize that however far the phenomena transcend the range of ordinary experience, the description of the experimental arrangement and the recording of observations must be based on common language. In actual experimentation this demand is amply satisfied with the specification of the experimental conditions through the use of heavy bodies like diaphragms and photographic plates the manipulation of which is accounted for in terms of classical physics Just this circumstance, however, excludes any separate account of the interaction between the measuring instruments and the atomic objects under investigation

Especially this situation prevents the unlimited combination of space-time coordination and the conservation laws of momentum and energy on which the causal pictorial description of classical physics rests. Thus, an experimental arrangement aiming at ascertaining where an atomic particle, whose position at a given time has been controlled, will be located at a later moment implies a transfer, uncontrollable in principle, of momentum and energy to the fixed scales and regulated clocks necessary for the definition of the reference frame. Conversely, the use of any arrangement suited to study momentum and energy balance decisive for the account of essential properties of atomic systems implies a renunciation of detailed space-time coordination of their constituent particles.

Under these circumstances it is not surprising that with one and the same experimental arrangement we may obtain different recordings corresponding to various individual quantum processes for the occurrence of which only statistical account can be given Likewise we must be prepared that evidence, obtained by different, mutual exclusive experimental arrangements, may exhibit unprecedented contrast and even at first sight appear contradictory.

It is in this situation that the notion of complementarity is called for to provide a frame wide enough to embrace the account of fundamental regularities of nature which cannot be comprehended within a single picture. Indeed, evidence obtained under well-defined experimental conditions — and expressed by adequate use of elementary physical concepts — exhausts in its entirety all information about the atomic objects which can be communicated in common language

A detailed account on complementary lines of a new wide domain of experience has been possible by the gradual establishment of a mathematical formalism, known as quantum mechanics in which the elementary physical quantities are replaced by symbolic operators subject to an algorism, involving the quantum of action and reflecting the non commutativity of the corresponding measuring operations Just by treating the quantum of action as an element evading customary explanation — similar to the role of the velocity of light in relativity theory as a maximal speed of signals this formalism can be regarded as a rational generalization of the conceptual framework of classical physics. For our theme, however, the decisive point is that the physical content of quantum mechanics is exhausted by its power to formulate statistical laws governing observations obtained under conditions specified in plain language.

The fact that in atomic physics, where we are concerned with regularities of unsurpassed exactness, objective description can be achieved only by including in the account of the phenomena explicit reference to the experimental conditions, emphasizes in a novel manner the inseparability of knowledge and our possibilities of inquiry. We are here concerned with a general epistemological lesson illuminating our position in many other fields of human interest

In particular, the conditions of analysis and synthesis of so-called psychic experiences have always been an important problem in philosophy It is evident that words like thoughts and sentiments referring to mutually exclusive experiences, have been used in a typical complementary manner since the very origin of language In this context, however the subject-object separation demands special attention Every unambiguous communication about the state and activity of our mind implies, of course, a separation between the content of our consciousness and the background loosely referred to as "ourselves" but any attempt at exhaustive description of the richness of conscious life demands in various situations a different placing of the section between subject and object.

In order to illustrate this important point, I shall allow myself to quote a Danish poet and philosopher, Poul Martin Moller, who lived about a hundred years ago and left behind an unfinished novel still read with delight by the older as well as the younger generation in this country. In his novel, called *The Adventures of a Danish Student*, the author gives a remarkably vivid and suggestive account of the interplay between the various aspects of our position, illuminated by discussions within a circle of students with different characters and divergent attitudes to life.

Especially I shall refer to a conversation between two cousins, one of whom is very soberly efficient in practical affairs, of the type which then, and even now is known among students as a philistine, whereas the other, called the licentiate, is addicted to remote philosophical meditations detrimental to his social activities When the philistine reproaches the licentiate for not having made up his mind to use the opportunities for finding a practical job, offered him by the kindness of his friends, the poor licentiate apologizes most sincerely, but explains the difficulties in which his reflections have brought him.

Thus he says.

> My endless enquiries make it impossible for me to achieve anything Furthermore, I get to think about by own thoughts of the situation in which I find myself I even think that I think of it, and divide myself into an infinite retrogressive sequence of "I"s who consider each other I do not know at which "I" to stop as the actual, and in the moment I stop at one, there is indeed again an "I" which stops at it. I become confused and feel a dizziness as if I were looking down into a bottomless abyss, and my ponderings result finally in a terrible headache

In his reply the cousin says:

> I cannot in any way help you in sorting your many "I"s. It is quite outside my sphere of

action and I should either be or become as mad as you if I let myself in for your superhuman reveries. My line is to stick to palpable things and walk along the broad highway of common sense; therefore my "I"s never get tangled up.

Quite apart from the fine humour with which the story is told, it is certainly not easy to give a more pertinent account of essential aspects of the situation with which we all are faced. Fortunately, the risk of falling into the deplorable situation of the licentiate is small in normal life, where we become gradually accustomed to coping with practical necessities and learn to communicate in common language what we need and what is on our mind. In such adjustment the balance between seriousness and humour, conspicuous in children's play and equally appreciated in mature life, plays no small part.

The complementary way in which words like contemplation and volition are used has especially to be taken into account when turning to the problem of the freedom of will, discussed by philosophers through the ages. Even if we cannot say whether we want to do something because we gather that we can, or we can only do it because we will, the feeling of, so to speak, being able to make the best out of circumstances is a common human experience. Indeed, the notion of volition plays an indispensable part in human communication similar to words like hope and responsibility, in themselves equally undefinable outside the context in which they are used.

The flexibility of the subject-object separation in the account of conscious life corresponds to a richness of experience so multifarious that it involves a variety of approaches. As regards our knowledge of fellow beings, we witness, of course, only their behaviour, but we must realize that the word consciousness is unavoidable when such behaviour is so complex that its account in common language entails reference to self-awareness. It is evident, however, that all search for an ultimate subject is at variance with the aim of objective description, which demands the contraposition of subject and object.

Such considerations involve no lack of appreciation of the inspiration which the great creations of art offer us by pointing to features of harmonious wholeness in our position. Indeed, in renouncing logical analysis to an increasing degree and in turn allowing the play on all strings of emotion, poetry, painting and music contain possibilities of bridging between extreme modes as those characterized as pragmatic and mystic. Conversely, already ancient Indian thinkers understood the logical difficulties in giving exhaustive expression for such wholeness. In particular, they found escape from apparent disharmonies in life by stressing the futility of demanding an answer to the question of the meaning of existence, realizing that any use of the word "meaning" implies comparison, and with what can we compare the whole existence?

The aim of our argumentation is to emphasize that all experience, whether in science, philosophy or art, which may be helpful to mankind must be capable of being communicated by human means of expression, and it is on this basis that we shall approach the question of unity of knowledge. Confronted with the great diversity of cultural developments, we may therefore search for those features in all civilizations which have their roots in the common human situation. Especially we recognize that the position of the individual within the community exhibits in itself multifarious, often mutually exclusive, aspects.

When approaching the age-old problem of the foundation of so-called ethical values we shall in the first place ask about the scope of such concepts as justice and charity, the closest possible combination of which is attempted in all human societies. Still it is evident that a situation permitting unambiguous use of accepted judicial rules leaves no room for the free display of charity. But, as stressed especially by the famous Greek tragedians, it is equally clear that compassion can bring everyone in conflict with any concisely formulated idea of justice. We are here confronted with complementary relationships inherent in the human position, and unforgettably expressed in old Chinese philosophy, reminding us that in the great drama of existence we are ourselves both actors and spectators.

In comparing different national cultures we meet with the special difficulty of ap[illegible] the instinct [illegible] characteristic for any [illegible] living organisms. In [illegible] to those met with in physics, psychology, and ethics, where we are dealing with intrinsic features of the common human [illegible]

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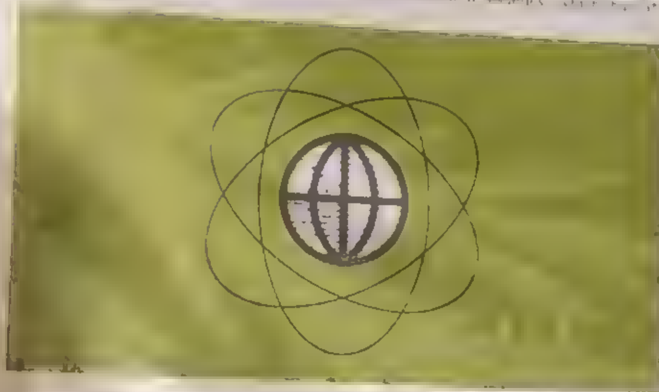

tracted so much attention at this meeting is after all a more restricted educational problem, the attitude to which would seem to call not only for information but, as I think everyone will agree, also for some humour. A most serious task is, however, to promote mutual understanding between nations with very different cultural background.

Indeed, the rapid progress of science and technology in our days, which entails unique promises for the promotion of human welfare and at the same time imminent menaces to universal security, presents our whole civilization with a veritable challenge. Certainly, every increase in knowledge and potentialities has always implied a greater responsibility, but at the present moment, when the fate of all peoples is inseparably connected, a collaboration in mutual confidence, based on appreciation of every aspect of the common human position, is more necessary than ever before in the history of mankind.

CANADA

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TRIBUTE TO THE LATE NIKOLA TESLA

"Tesla's ideas changed the face of the world and even in his death manufacturers were uneasy lest machines worth billions should be made obsolete by a final inspiration of the versatile but dying giant." Reader's Digest - [illegible] 1947

In 1884 young Nikola Tesla came from Serbia to the Edison Electric Company in New York, as an engineer, with empty pockets but with his head full of ideas. One year later he had his own electrical company.

At the same time he continued the work which he had started in Europe on alternating current machines. Having obtained patents on A.C. machines, he sold them to the Westinghouse Company which immediately started manufacturing them. Subsequently he developed the poliphase current system and the first large transmission of this new form of electrical energy was made in 1886 from Niagara Falls to Buffalo. In 1896 this same line carried 15,000 H.P.

In New York Tesla founded a large laboratory with the money he obtained from the sale of these patents. In this laboratory he worked on high frequency currents fundamental to the wireless telegraphy. In 1895 his work was interrupted when his laboratory burned to the ground.

This was not the end of Tesla's work. He continued to discover many things fundamental to to-day's sciences. The induction motor, high frequency currents and oscilators, the application of these for technical and medical purposes, the discovery of radio principles basic to the radio guided missiles and other devices of to-day, fundamentals of electrical transmission of power, are some of the more important works of Nikola Tesla.

He died in 1943 in New York, leaving behind him such numerous accomplishments as are indicated below by this list of his main patents:

1) Commutators for dinamo machines
2) Electric arc lamps
3) Regulators for dinamo machines and arc lamps
4) Machines poliphase
5) Electric poliphase motors (27 patents)
6) Transformers and way of distribution of poliphase currents
7) Electrical transmission of Power (Base for to-day's industry)
8) Converting of alternating current in direct current
9) Motors thermomagnetic and pyromagnetic
10) Generators of high frequency
11) Bulbs for high frequency lighting
12) Electrical condensers (capacitors)
13) High frequency oscilators
14) Wireless transmission (21 patents)
15) Turbines, speedometers, frequency meters, lighting dischargers, waterflow meters, etc.

These ideas, used throughout the world for the benefit of all, are the records of the life work of a forgotten man.

B. LEO[illegible]

Absent-minded Professor: Bohr

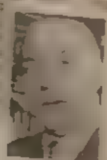
[illegible]

Scientist Sees Great Possibilities for Peace

[illegible]

LEONARD LYONS

Absent-minded Professor: Bohr



Bohr

Scientist Sees Great Possibilities for Peace

By VICTOR COHN

NIELS BOHR
"Great possibilities of peace"

dicial proceeding about things which were certainly no problems and that one should take up small points many years after."

...obel prize winner, ... Peace award winner, is meeting scientists and civic leaders in a series of luncheons and dinners and will give a public address and receive an honorary doctors degree at 8 p.m. tonight in Macalester field house. Only standing room and overflow room nearby are still available.

Mother of 3 Admits Forging Checks

Mrs. Gloria Mae Cossette, 24, 1553 Ames street, St. Paul, Tuesday pleaded guilty to second degree forgery after authorities said she ... $1,3... Theodore B. Knud... 24 for sentencing ... is divorced

OVER - ANXIETY about ... caused ... to expel ... Robert Oppe... from government ...

...ning T...

DECEMBER 12, 1957

Bohr Says F... Can Do Mo...

By VICTOR ...
Minneapolis Tribune ...

"We of the free countries" ... the greatest resources ... improve the critical ... situation.

This was the challenge for free peoples that Dr. N... Bohr, Danish scientist, st... Wednesday night before 4,... persons at Macalester college in St. Paul.

He led to it by taking the 4,500 down a rich one-hou... path touching ...

... atom has application in wide fields of human interest."

He recognized that there is a "new situation in the history of mankind" ... of the ... danger of wiping out man.

Then he concluded:

"IN POINT ... I... science, new problems demand new approaches.

"Now, we must think, all of us of the ... to human re...

"And in the countries where by happy development and traditions there is a great liberty for individuals, and open discussion, we are in a better state than ... where there is not that free ...

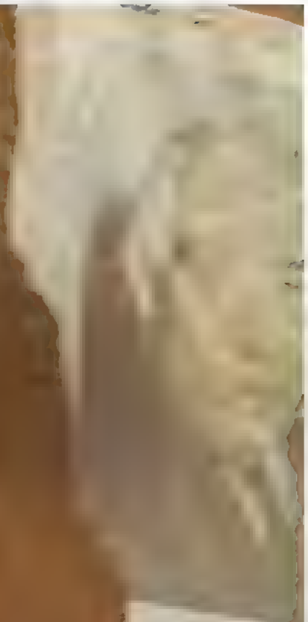
Bohr wi... Wednesday ... ter College ... overflow c... ticket holde... 'Atoms and ... edge.'

...es Great
...for Peace

...ning Ti...

Bohr Says F...
Can Do Mo...

BOHR



Tuesday, Dec. 10, 1957

Associated Press photo

NIELS HENRIK BOHR

Is ' 'gency' for mankind

...NATIVE SUICIDE'

...entist Bohr Sees ...ope' for Humanity

By HAL SEYMOUR
Minneapolis Star Staff Writer

... for the ...

Bohr, long an advocate o...

In explaining this concept... Bohr noted he theory ... in the field ... physics — applies equally to all aspects of human endeavor.

It holds that results obtained in research and ...

... which the investigation is made. In isolating part of what is under study, man may kill or lose that part because it exists complementary to the whole.

This, Bohr said, applies to the psychologies, sociologies, "to all fields including ethical values," as well as the physical sciences.

Because of this, Bohr said the great technological ad... expected' to the benefit of all mankind — a new 'attitude' toward problems of ...

Turn to Page 4A

...xtilers ...OKd' by AFL-CIO

ATLANTIC CITY ...

... Workers union for ... Thursday.

The appeals committee of the AFL-CIO convention accepted a signed statement from UTW leaders pledging ... compliance with AFL-CIO ... to reform alleged corrupt conditions in the union.

The appeals group then recommended that UTW suspension from the federation be cancelled and the union restored to good standing.

The UTW had faced expulsion action, such as already has been voted for the giant Teamsters union, also on corruption charges.

... the Bakery Workers union expelled by noon Thursday if James G. Cross, union president ... charges, continues refusal to surrender his office.

...ng Ti...

...ER 1..., 1957

...ohr Says F... ...an Do Mo...

By ...

... situation."

... was the challenge for ... peoples that Dr. Niels ... Danish scientist, stated ... today ... before ... at Macalester ...

... by taking the ... a rich, one-hour ... some of the ... modern science ... brought him honor...

... of these ... conferred on him ... Macalester president ... Turck last night ...

... quiet hour the ... physicist ... knowledge we have ...

... that there ... in the ... because ... of science ... of ...

... approach ... approaches ... relations ...

BOHR

... between ...

Humans now are "almost omnipotent" in their scientific achievements, the ... white-haired physicist explained. Man must realize these unique opportunities to apply physical knowledge to other aspects of civilization.

... without ... he added.

Bohr, a contemp... said today's press conference was his first in this country despite numerous trips ...

... living room at the residence of Dr. Charles J. Turck, president of Macalester, he sat between his wife and Mrs. Eugenie Anderson of Red Wing, former ambassador to Denmark. Dr. Bohr spent the weekend at the Anderson home.

He lit his worn pipe often as he listened to questions, then cupped it in his always flexing hands and studied ... from under shaggy eyebrows as he replied.

His ... mbling voice remained soft, even when he ...

... today. His voice was so quiet it was occasionally lost in the scratching of pens and pencils on notepads.

Bohr will speak at 8 p.m. Wednesday in the Macalester ... fieldhouse to an ... crowd of 5,000 ticket holders. His subject is "Atoms and Human Knowledge."

CLOSE-UP

Erudite, Human Dr. Bohr

WHENEVER nuclear physicists come up with a new idea," said one of them recently, "their first thought is 'I'd better consult Professor Bohr about this.'" The enormous regard in which fellow scientists hold Niels Bohr was reaffirmed last month when the 7[illegible]-year-old Danish physicist won the first $75,000 Atoms for Peace Award. In Copenhagen, where he still actively directs the Institute for Theoretical Physics he founded 37 years ago, Dr. Bohr was characteristically surprised by the news. He is a modest, temperate man and almost the only thing he seems incapable of comprehending is his awesome international renown.

Bohr, whom his friend Albert Einstein called "one of the greatest scientific discoverers of our age," published in 1913, at the age of 28, three treatises on atomic structure which in large measure laid the theoretical groundwork for the present atomic age. In 1922 he won the Nobel Prize. In 1939 at Princeton, he announced, in collaboration with J. A. Wheeler, the identity of Uranium-235 and prophesied "a chain action and [illegible] explosion of enormous proportion." In 1943, in one of the cloak and dagger dramas of the war, he was smuggled from Nazi-occupied Denmark to Sweden in the cabin of a fishing boat, flown to England in the bomb bay of an R.A.F. plane and thence to Los Alamos for work on the atomic bomb.

Long before the bomb's completion he foresaw its positive significance and in 1944 broached the subject of international control in a letter to President Roosevelt. He believes now, as then, that "the very fact that knowledge is the basis for civilization points to openness [illegible] international scientific cooperation] as the way to overcome the present crisis." This belief is the basis for his institute, the world capital of theoretical physics, which last year was given a $200,000 grant by the Ford Foundation.

Dr. Bohr lives in a [illegible] "mansion of honor," provided for life to each foremost Danish man of science. There he is happily surrounded by his wife Margrethe, his four sons and 12 grandchildren. He is a man of deep affection, warm humor but no small talk whatever. "[illegible] must make a little philosophy in everything [illegible]," he explains.

[illegible] gure-covered blackboard [illegible] talks to scientists visiting [illegible]

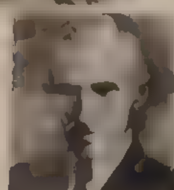
"[illegible] through the ages [illegible] The pleasure [illegible] that one [illegible] and think only of the subject [illegible] and the gist [illegible] questions raised by other participants."

ded
Bohr
Mother of
Forging

Science celebrates 100th anniversary of

Mr. Tesla, who made work easier

By Gardner Soule



THE eyes of this man, Nikola Tesla (left), saw the world of the covered wagon into which he was born turn into today's world of electricity, radio and electronics, all within his lifetime. Other men also saw the change and marveled at it. Tesla was not amazed. He planned it. He engineered it.

This month, engineering and scientific societies observe the 100th anniversary of the birth of this man who changed the world. Tesla was born about the time that sailing ships reached their peak—in the clippers. Before he was 40, he had invented the AC motor and long-distance transmission of electric power. By these two things alone he made thousands of jobs easier everywhere, at home and at work. He also discovered many principles of radio and electronics. And even thought that he could broadcast power, as radio and TV are broadcast today.

Tesla at about 40, at the height of his powers, is shown in the upper photo; in the lower portrait he is near 80. Because of the vast change he made in the world, Tesla can be said, as much as anyone, to have "invented" Today. His life and work are shown on this and the next four pages.

1856 Nikola Tesla was born at midnight, July 9-10, in Smiljan, Croatia, now part of Yugoslavia. Little is known of his father. His mother could not read or write. But she could use her mind. She recited dozens of long poems and mechanically improved such household items as churns. Nikola showed flashes of scientific intuition from his early boyhood.

1857-60 In a world where 25 men scrounged a living with their muscles for every one who made a living any other way, Nikola, before he was five, played with another source of power. The use of wheels to harness water power was as old as history. From the disk of a tree trunk he made one, set it up as shown and watched as the current's force turned it

1850s-60s In America, some men hauled carts by hand from the Missouri River to Salt Lake. Horses worked just as hard: The Pony Express raced mail from St. Joseph, Mo., to San Francisco in 10 days. In Croatia, Nikola, seven, saw a fire engine that wouldn't pump water. Intuitively, he diagnosed the trouble. He dived into the river and unkinked the hose.

1865 The world struggled with a new power—inefficient, dirty, hissing steam. In four years men would complete (by hand) a track across the U.S. Tesla, nine, struggled with another power: He made a tiny windmill, glued four June bugs to the blades. Their beating wings turned the blades, and a spindle. He dreamed of a 100-bugpower machine but never built it.

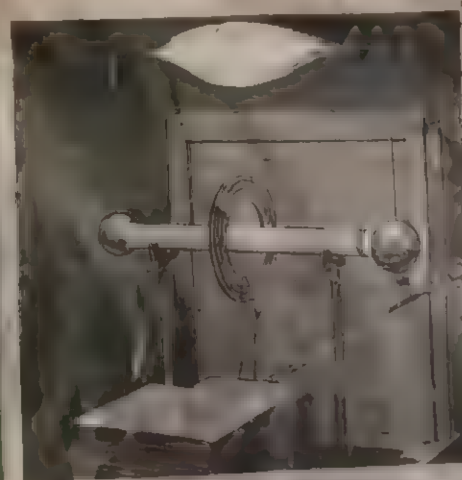
1884 "No more will men be slaves to hard tasks," Tesla said. "My motor will set them free." But no one would give him financial backing. He sailed to the U.S., lost his baggage, his model—all but four cents. But of all the 518,592 immigrants who arrived in '84, he would change the country most. His mind carried all the plans for making it possible.

1885-87 Tesla met and worked for Edison. But Edison was no readier for AC than Europe had been. The arguments were vigorous. Tesla and Edison described each other's mentality as low. Tesla quit his job with the inventor. Soon he was reduced to the drudgery that the world was full of. He became a day laborer and went to work as a ditchdigger.

1866-80 Steam power spread. An engine reached Croatia. Nikola, about 14, saw it—the first man-made source of power he had ever seen. He also saw a snowball, rolling downhill, become an avalanche. He noted that accumulated ounces of snow had turned into a great, moving power. He saw a picture of Niagara Falls, and said, "Some day I'll harness that."

1882-83 After Thomas Edison opened his first plant—DC—to light lamps of his 59 nearby customers, the world grew dimly aware of the wonders of electricity. In Europe, Tesla, 25, thought that electricity could also provide power. Needed: an AC motor, thought to be as impossible as perpetual motion. He dreamed up the plans and made a model. It ran.

1888 Suddenly Tesla hit the jackpot. He got patents on his AC motor and impressed the American Institute of Electrical Engineers (this month celebrating his 100th birthday) with a lecture which explained his idea. George Westinghouse, a competitor of the famous Edison, gave Tesla, the recent ditchdigger, a million dollars for the patent rights to his motor.



1889-90 Working together, Westinghouse and Tesla soon evolved AC motors and dynamos of many sizes. Tesla built a high-voltage coil—the Tesla coil—that, with one end inert, the other spouting thousands of volts, would light lamps placed on the other side of the room—without using wires. This was the beginning of his attempts to broadcast power.

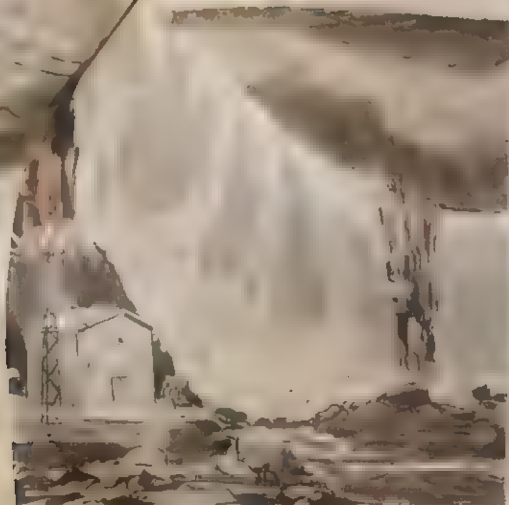
"Life of Tesla"

1892 To concentrate on work, Tesla ruled out romance. If his discoveries looked impossible in those days of warring Indians, skinny-tired bicycles, and horsecar commuting, he did something—for a man—which was considered more impossible. The "divine" actress, Sarah Bernhardt, dropped her handkerchief before him. He returned it—without saying a word.

1893 [illegible] shows were the late [illegible] Sarah Be[illegible]

1899-1900 Tesla thought that the earth was electrically charged. It is. At Colorado Springs he set up a plant that would add to the earth's charge so you could plug in anywhere and get electricity. He pumped power in, claimed to draw it back—creating lightning. Unfortunately, he never wrote down the details of his experiments for future reference.

1901-16 At a time when radio consisted only of dot-dash messages, Tesla set out to build, on Long Island, N. Y., a radio city that would broadcast both power and all the kinds of programs that are known to such widespread audiences today. Tesla never got around to broadcasting either. But he did discover many fundamentals of radio. Then he went broke.



1895-96 Westinghouse and Tesla put on their biggest show. They built a powerhouse at Niagara Falls. General Electric, with Tesla methods, built a 22-mile transmission line to Buffalo. This was a significant advance. Edison had delivered power about a mile. Here power went from one area to another. The age of sending power far and wide had dawned.

1898 The U.S.'s Admiral George Dewey licked the Spaniards in Manila Bay. Tesla, at Madison Square Garden, put a boat equipped with radio in a tank of water. From afar, he started, steered, and lighted the vessel—by radio. It was, he said, the first of a race of robots that would fight—operated by remote control—in the future wars of the world.

1920s-30s Growing old, Tesla withdrew even more into himself. This man who was responsible for every AC motor (162 million horsepower when he died), and every transmission tower and line, kept his blinds closed except during storms. Then he would throw open his windows, lie down on a couch and watch the lightning dance across the sky.

1930s-40s The world last saw Tesla on the steps of the New York Public Library. He had found a love. Daily he fed the pigeons. The man who had made work easier for millions all over the world was the old man whom unknowing thousands saw feeding the pigeons. On January 7, 1943, at 86, Nikola Tesla died alone in a New York hotel room. END

Harold Koskinen

Elliott Cresson Medal of the Franklin Institute

Awarded to Tesla 1894

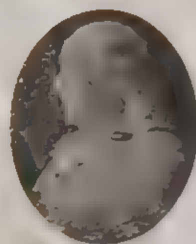
Citation

Nikola Tesla

Alternating Electric Currents of High Frequency - 1894

"For his earnest and idefatigable work as a pioneer in this new field and on account of the great value to Science of his researches, the Institute awards to Nikola Tesla, the Elliott Cresson Gold Medal."

Adopted December 6, 1893
Committee on Science and the Arts.



THE PRESIDENT
AND THE BOARD OF MANAGERS OF
THE FRANKLIN INSTITUTE
REQUEST THE PLEASURE OF THE COMPANY OF

Mr Leland Anderson

AT DINNER

Wednesday, May fifteenth

IN THE FRANKLIN INSTITUTE
TO MEET

Dr. Samuel G. Hibben

WHO WILL AFTERWARDS SPEAK ON THE SUBJECT

"From Tesla Until Tomorrow, - The Magic of Making Light"

Reception: 6:30 P. M.
Dinner: 7:00 P. M.
Dress: Informal

Parkway Entrance

Please Reply to
The Secretary
The Franklin Institute
Philadelphia 3, Pa.

N INSTITUTE
TWENTIETH ST. · PHILADELPHIA

OF THE INSTITUTE
LECTURE

1957, at 8:15 P. M.

Mr Ander—

G. HIBBEN
on and Illumination

the subject

"FROM TESLA UNTIL TOMORROW—
THE MAGIC OF MAKING LIGHT"

The speaker will describe and demonstrate the significant exp[illegible]
Nikola Tesla, which involved original ways of making light, and h[illegible]
of today's and tomorrow's magical methods of producing radiant [illegible] spec-
imens will be shown of possible future light sources, and their influen[illegible]

Parkway Entrance

THE FRANKLIN INSTITUTE
Benjamin Franklin Parkway at Twentieth Street
PHILADELPHIA 3, PA.

Mr Leland I. Anderson

ADMISSION TICKET

for dinner on MAY 15 1957

RECEPTION 6:30 P. M. DINNER 7:00 P. M. INFORMAL DRESS

THIS CARD WILL BE COLLECTED AT THE DINNER TABLE

RADIO - ELECTRONICS
HUGO GERNSBACK, PUBLISHER

GERNSBACK PUBLICATIONS, INC.

154 WEST 14th STREET • NEW YORK 11 • N. Y. • Algonquin 5-7755

June 18, 1956

Mr. Leland I. Anderson
1615 East River Terrace
Minneapolis, Minnesota

Dear Mr. Anderson:

A commemorative ceremony will be held at 11 A. M., Monday, June 25th, honoring the 100th anniversary of the birth of the late Nikola Tesla, possibly the greatest inventor who ever lived. At that hour, in our editorial offices, Leo Mates, Yugoslavian Ambassador to the U.S., will unveil a memorial head of the great inventor.

The Yugoslavian diplomat was invited to officiate at the unveiling because Tesla was a native of Croatia, now a part of Yugoslavia.

The undersigned, a long-time intimate friend of Tesla, is arranging the ceremony, and he also commissioned the commemorative sculptured base upon which the head rests.

Tesla - the Father of Wireless - was credited with more than 1,000 inventions, over 900 of which he patented. Unfortunately, he was so far ahead of his contemporaries that his patents often expired before they could be put to practical use. Our whole alternating current power system rests on Tesla's rotating field multiphase alternating-current concepts. He described a wireless system--with elevated antenna at transmitter and receiver--in 1893, one year before Marconi became interested in the study of wireless. Tesla's radio-guided submarine of the 1890s is the ancestor of all guided missiles. His filament-less electric lamps were the forerunners on which our neon and fluorescent lamps of today are based.

The memorial is the actual death mask which the writer obtained on the day of Tesla's death, January 7, 1943. The writer conceived the idea of having the original plaster of Paris death mask heavily copper plated, a delicate process never carried out before, which required ten days, so it could be permanently preserved for posterity.

The outstanding sculptor, Onorio Ruotolo, executed the novel base upon which the head is mounted. The three medallions on the base depict Tesla's outstanding inventions; the induction motor, first to use alternating current; the famed Tesla coil, which gave us high frequency currents; the Tesla Wireless Tower, first to transmit power by wireless through space.

The writer sincerely hopes that he may welcome you at our offices on the 25th. Please be kind enough to reply to the enclosed invitation.

Sincerely yours,

RADIO-ELECTRONICS

H. Gernsback

H. Gernsback,
Publisher

[illegible], executed the novel base upon which the
[illegible] of the base [illegible] Tesla's outstanding in-
first [illegible] alternating current; the famed Tesla
[illegible] currents; [illegible] Tesla Wireless Tower, first [illegible]
[illegible].

[illegible] you at our offices on the 25th.
[illegible] enclosed invitation.

Sincerely yours,

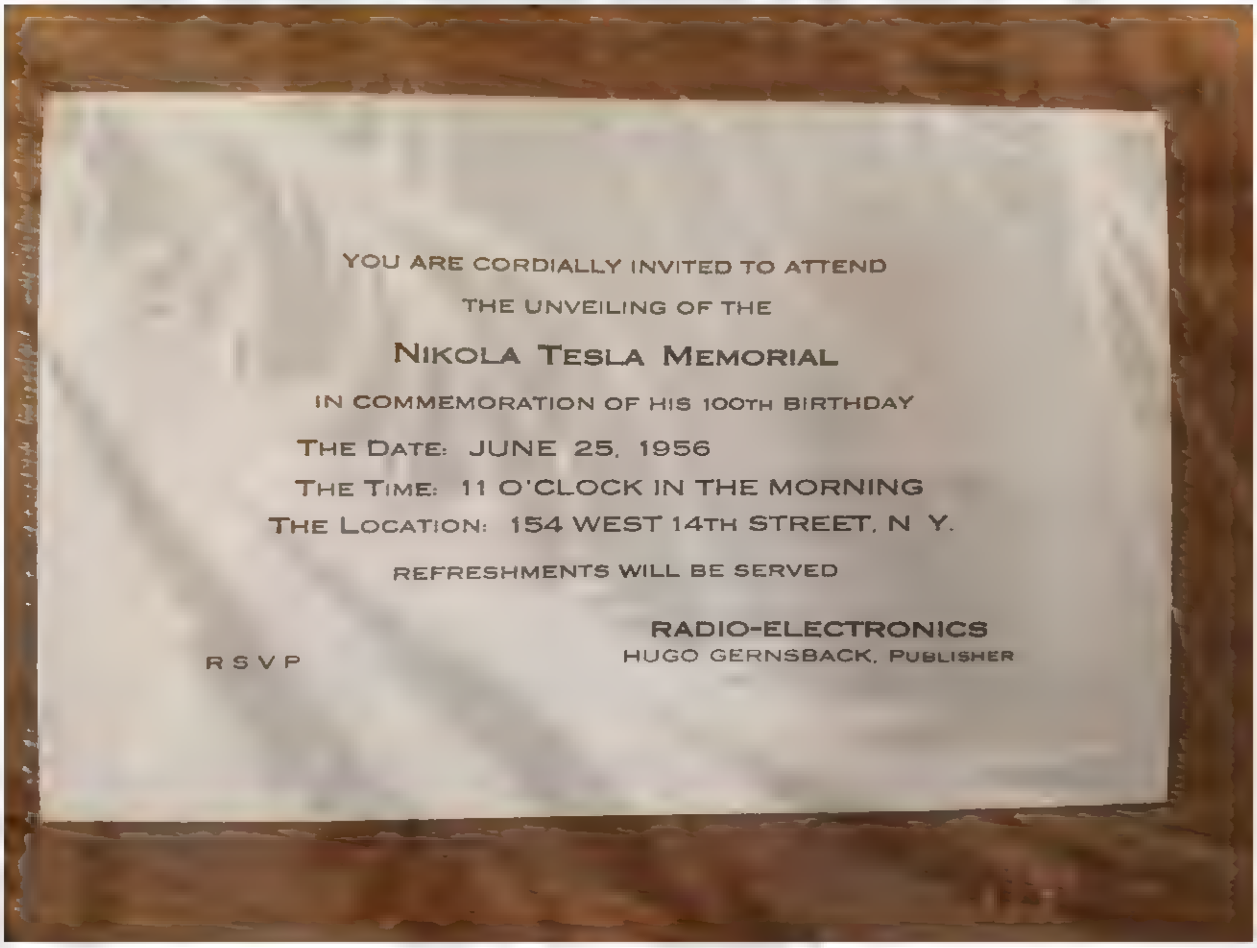
RADIO-ELECTRONICS

H. Gernsback
per [illegible]

H. Gernsback,
Publisher

DIT BUREAU OF CIRCULATIONS


RADIO-ELECTRONICS
154 WEST 14th STREET
NEW YORK 11, N. Y.
VIA AIR MAIL
Mr. Leland I. Anderson
1615 East River Terrace
Minneapolis, Minnesota
and I. Anderson



YOU ARE CORDIALLY INVITED TO ATTEND

THE UNVEILING OF THE

NIKOLA TESLA MEMORIAL

IN COMMEMORATION OF HIS 100TH BIRTHDAY

THE DATE: JUNE 25, 1956

THE TIME: 11 O'CLOCK IN THE MORNING

THE LOCATION: 154 WEST 14TH STREET, N. Y.

REFRESHMENTS WILL BE SERVED

R S V P

RADIO-ELECTRONICS

HUGO GERNSBACK, PUBLISHER

TESLA COMMEMORATIVE CEREMONY - LIST OF GUESTS WHO ATTENDED

Mr. Leon L. Adelman
25 Chittenden Avenue, New York, N.Y.

Mr. M. Jelisjevitch
Friend of Mr. Adelman

Mr. Ernest V. Amy
11 West 42 Street, New York, N.Y.

Miss Muriel Arbus
600 West 113 Street, New York, N.Y.

Mr. George W. Bailey
Executive Secretary, Institute of Radio Engineers

Mr. Robert H. Barclay
Vice-President in charge of engineering, J.G. White Engineering Corp.
80 Broad Street
New York, N.Y.

Mr. Michael Blan
Blan, The Radio Man
64 Dey Street, New York, N.Y.

Mr. George E. Burghard
240 Central Park South, New York, N.Y.

Mr. Maurice Coyne
241 Church Street, New York, N.Y.

Mr. G. J. Eltz
225 Lincoln Avenue, Avon, New Jersey

Mr. Nikola Fuchs
Sales Engineer, Westinghouse Electric International Co.
40 Wall Street, New York, N.Y.

Mrs. Agnes J. Holden
327 East 52 Street, New York, N.Y.

Mr. Harry Houck
Measurements Corp.
Boonton, New Jersey

Mr. Leon Kirsch
11-18 Beach 25, Far Rockaway, L.I., N.Y.

Mr. Lazar Lilic
Consul General of Yugoslavia, New York City

Mr. John T. Morris
Patent Attorney, Westinghouse Electric International Co.
40 Wall Street, New York, N.Y.

Mr. James O'Neil
Public Relations Representative, Westinghouse Electric International Co.
40 Wall Street, New York, N.Y.

Mr. Onorio Ruotolo
Sculptor - One Union Square
New York, N.Y.

Mr. George H. Scherff
149 Seacord Road, New Rochelle, New York

Miss Dorothy F. Skerritt
Lake Hiawatha, New Jersey

Mr. Kenneth M. Swezey
163 Milton Street, Greenpoint, Brooklyn, N.Y.

Mr. Gordon Sylander
Public Relations Representative, Westinghouse Electric International Co.
40 Wall Street, New York, N.Y.

Mr. Vilko Winterhalter
Director, Yugoslav Information Center
816 Fifth Avenue, N.Y., N.Y.

Mr. Paul F. Godley
Old Quarry Road, Great Notch, New Jersey

FORBES MAGAZINE
Mr. Jim Michael
Mr. H. T. Cook

MECHANIX ILLUSTRATED
Mr. R. Brightman

NEW YORK JOURNAL-AMERICAN
Reporter
Mr. Paul Rice, Photographer

NEW YORK TIMES
Mr. William L. Laurence
Mr. David T. Anderson

POPUL[illegible]LY
Mr. Herbert Johansen

SCIENCE & M[illegible]ICS
Mr. Russell [illegible]uckhout
Mr. Silber

ASSOCIATED PRESS
Mr. Milt[illegible]n Lewin

CAMERA AS[illegible]IATES
Mr. Lax

600 West 113th Street,
New York, N.Y.
July 4, 1956.

Dear Mr. Anderson:

Thanks for the March-July issue of THE TESLIAN and wish to congratulate you on the well written comments of the Centennial Anniversary.

Also, the collection of condensations I had not seen before, all of which are very interesting.

Last Monday there was an unveiling of the death mask of Tesla at Radio-Electronics, Hugo Gernsback publications on 14th Street where his offices are located. There were present quite a few distinguished guests, including Mr. Lazar Lilic, and Mr. Vilho Winterhalter, the former the Consul General of Yugoslavia and the latter, director of Yugoslavia information service here. Westinghouse Electric International Co., Public Relations representative, Mr. Gordon Sylander and Mr. John T. Morris, Chief Patent Attorney of that company gave a very fine address about the early days of Mr. George Westinghouse and Nikola Tesla. He was most complimentary. Mrs. Agnes Holden whose father was publisher of Century Magazine, also made a good talk about Tesla's early days and his gaiety at that time. Both Miss Skerritt and myself made a few comments.

The Press was represented by Forbes Magazine (Jim Michael and Mr. Cook) New York Journal American, Popular Science Monthly, Mechanix Illustrated, Camera Associates, Associated Press and last but not least, our good friend, Mr. Kenneth M. Swezey, free lance writer.

Itwas indeed a very nice affair, and after the unveiling and speeches refreshments and drinks were served. Oh yes, Mr. William L. Laurence, Science Editor of the New York Times and a Mr. Anderson were present.

Believe that they will save all the photos until July 10th as none has appeared as yet, although the N.Y. Times gave an account of the unveiling the next day.

The article has not been published, although I have sent a copy of it over to Mr. Kosanovich, the nephew of Tesla. I have not received an acknowledgment yet as it was only sent recently, but in time for the Centennial.

Mr. Hermann of McGraw Hill told me that an article would appear in ELECTRONICS but have not seen it as yet, but the July issue must be out now.

Shall not be able to go to the Chicago meeting of the American Institute of Electrical Engineers in October, although it sounds very attractive. Presume you will be going as you are close to Chicago and I expect that Kenneth Swezey will be there too. Was so busy at the unveiling ceremonies did not get a chance to talk to him, only to greet him at the door, as I was the hostess to receive all the guests, that's how I know who came.

Also compliment you on the 1856-1956 events in the life of Nikola Tesla.

Kind regards ,

Yours sincerely,

Muriel Arbus

RADIO-ELECTRONICS

NEWS RELEASE

154 WEST 14th STREET
NEW YORK 11, N. Y.

ALgonquin 5-7755

June 25, 1956

A commemorative ceremony was held at 11 A.M., Monday, June 25th, at the offices of RADIO-ELECTRONICS magazine, at 154 West 14 Street, New York, honoring the 100th anniversary of the birth of the late Nikola Tesla, possibly the greatest inventor who ever lived.

Lazar Lilic, consul general of Yugoslavia in New York, unveiled a memorial head of the great inventor. The Yugoslavian diplomat was invited to officiate at the unveiling because Tesla was a native of Croatia, now a part of Yugoslavia.

Hugo Gernsback, the publisher, a long-time intimate friend of Tesla, arranged the ceremony, and he also commissioned the commemorative sculptured base upon which the head rests.

Tesla--the Father of Wireless--was credited with more than 1,000 inventions, over 900 of which he patented. Unfortunately, he was so far ahead of his contemporaries that his patents often expired before they could be put to practical use. Our whole alternating current power system rests on Tesla's rotating field multiphase alternating-current concepts. He described a wireless system--with elevated antenna at transmitter and receiver--in 1893, one year before Marconi became interested in the study of wireless. Tesla's radio-guided submarine of the 1890s is the ancestor of all guided missiles. His filament-less electric lamps were the forerunners on which our neon and fluorescent lamps of today are based.

In May, 1888, the young engineer Tesla, but four years in the United States, read a paper before the American Institute of Electrical Engineers. In it he described a new alternating current system. The heart of the lecture was the induction motor with its basic and beautiful concept of the rotating magnetic field, the system which was destined to sweep the field. Among the listeners was George Westinghouse.

With characteristic vision, Westinghouse realized the fundamental importance of the polyphase AC system and acquired the basic patents. Its first impact on the general public was at the Chicago World's Fair in 1893. There a a Westinghouse Electric Company two-phase generator supplied motors and lamps. But it remained for the Niagara Falls power project to demonstrate in the most dramatic way possible that polyphase AC was the system of the future, for in August, 1895, Niagara power was delivered to the first industrial customer, and in 1896 AC transmission to Buffalo, 22 miles away, was begun. Through the

combined efforts of Nikola Tesla and George Westinghouse the modern age of electric power had truly opened.

The memorial is the actual death mask which Mr. Gernsback obtained on the day of Tesla's death, January [illegible], [illegible]. He conceived the idea of having the original plaster of Paris death mask heavily copper plated, a delicate undertaking never carried out before on a death mask. It required a ten-day electroplating process so the memorial could be permanently preserved for posterity.

The outstanding sculptor, Onorio Ruotolo, executed the novel case upon which the head is mounted. The three medallions on the base depict Tesla's outstanding inventions: the induction motor, first to use alternating current; the famed Tesla coil, which gave us high frequency currents; the Tesla wireless tower, first to transmit power by wireless through space.

Over 50 persons, all old-timers who knew Tesla personally, attended the unveiling exercises. There were many notables among the invited guests.

* * * * * * * * *

SEE ALSO RADIO-ELECTRONICS JULY 1956, Pages 6 and 29.

[illegible] efforts of Nikola Tesla [illegible] electric power has truly opened [illegible]

The memorial [illegible] the actual [illegible] day of Tesla's death [illegible] original [illegible] of Paris death [illegible] undertaking never carried out [illegible] electroplating process so the memorial [illegible] permanent [illegible] posterity.

The outstanding sculptor, [illegible] which the [illegible] is mounted [illegible] outstanding inventions: the induction motor [illegible] current; the famed Tesla coil, which gave us [illegible] current [illegible] Tesla wireless tower, first to transmit power by wireless [illegible]

Over 50 persons, all old-timers who knew Tesla personally, attended the unveiling exercises. There were many notables among the invited guests.

* * * * * * * * *

SEE ALSO RADIO-ELECTRONICS JULY 1956, Pages 6 and 29.

[illegible]

The memorial i[illegible] day of Tesla's death, [illegible] original plaster of Paris [illegible] undertaking never carried out [illegible] electroplating process so the [illegible] posterity.

The outstanding sculptor, Onorio Ruotol[illegible] which the head is mounted. The three [illegible] outstanding inventions: the induction motor, first [illegible] current; the famed Tesla coil, which gave us high fr[illegible] Tesla wireless tower, first to transmit power by wir[illegible]

Over [illegible]0 persons, all old-timers who knew Tesla personally, atten[illegible] unveiling exercises. There were many notables among the invited [illegible].

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SEE ALSO RADIO-ELECTRONICS JULY 1956, Pages 6 and 29.

AUG 1 ? 67

Hugo Gernsback, Radio and TV Pioneer, Dies

NEW YORK, Aug. 19 (AP) — Hugo Gersback, 83, an early electronics experimenter, publisher of science fiction and "scientific prophet," died today.

Gernsback was editor-in-chief of "Radio-Electronics," a television repairman's magazine, and editor-in-chief and publisher of "Sexology," and its Spanish-language version, "Luz."

Gernsback, who came here from Luxembourg, established one of the first radio supply houses, broadcast primitive television programs from a downtown transmitter in the 1920s, and wrote and edited some of the first science fiction books and magazines.

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WONDER
Stories
Science-Fiction
AMAZING STORIES
RADIO
NEWS
Mechanics
10
CENTS


»NIKOLA TESLA«
TVORNICA TELEFONSKIH UREĐAJA
1949 - 1959


20-GODIŠNJICA SMRTI
NIKOLE TESLE
NEWYORK
7.1.1943
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IN MEMORY OF THE FATHER OF WIRELESS
20-GODIŠNJICA SMRTI
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JUGOSLAVIJA
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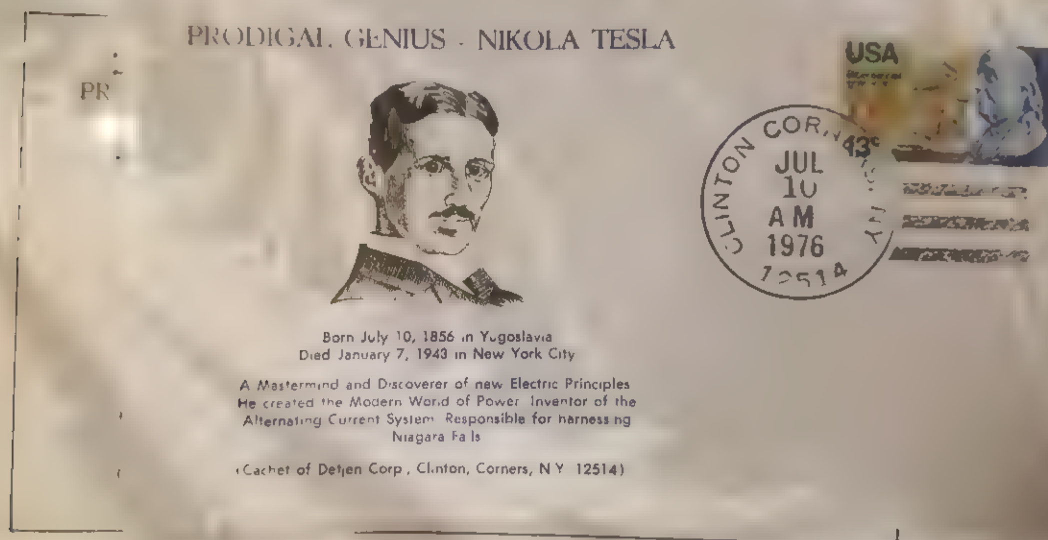
for you to urge your Governor, Senators, Congressmen and other influential persons to use their prestige in persuading the U. S. Postal Service to authorize a NIKOLA TESLA stamp.

Possibly you have some other suggestions on how a Tesla stamp can become a r



Blue and Black cacheted cover with Tesla sketch, franked with #1690 Benjamin Franklin stamp and postmarked July 10, 1976 $1.50
#10 stamped addressed return envelope requested, so that cover may be mailed unaddressed.

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SOCIETY OF PHILATELICIANS

The Philatelic Journalist

An Independent Bi-Monthly Publication for the Philatelic Journalist and Publicist

Editor: Gustav Detjen, Jr., Clinton Corners, N. Y. 12514

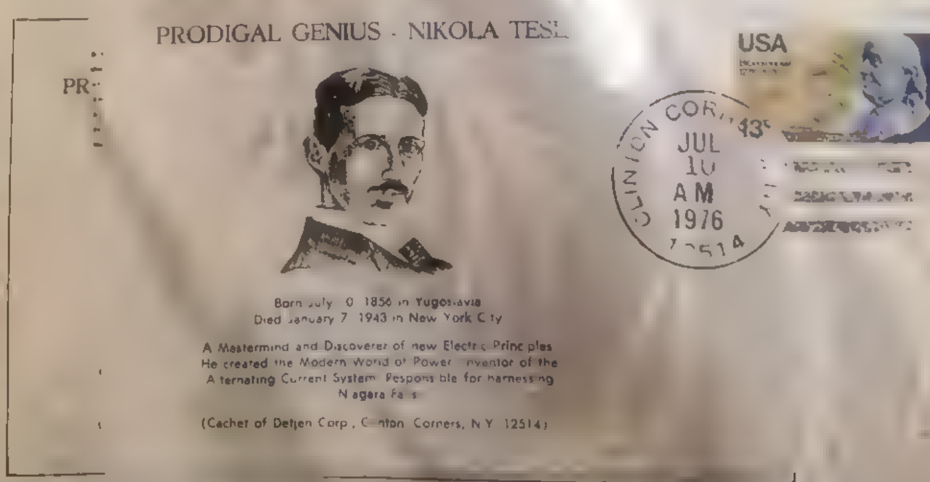
A COMMEMORATIVE STAMP TO HONOR NIKOLA TESLA (1856-1943)

While the U. S. Postal Service has featured many famous persons on postage stamps, the illustrious Jugoslavian-born American inventor, NIKOLA TESLA, has not yet been honored in this way.

He was a mastermind and discoverer of new electric principles, thereby creating the modern world of power. He invented the Alternating Current System and was responsible for harnessing Niagara Falls.

The 125th anniversary of his birth on July 10, 1856 in Smiljan, Lika, Jugoslavia occurs in 1981. It would seem appropriate that a commemorative stamp be issued for that occasion. Therefore, we request your cooperation in proposing such a stamp to the U. S. Postal Service and the Citizens' Stamp Advisory Committee. It may also be advisable for you to urge your Governor, Senators, Congressmen and other influential persons to use their prestige in persuading the U. S. Postal Service to authorize a NIKOLA TESLA stamp.

Possibly you have some other suggestions on how a Tesla stamp can become a r[illegible]



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United States of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 97th CONGRESS, FIRST SESSION

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House of Representatives

COMMEMORATING NIKOLA TESLA

Remarks by:

HON. HENRY J. NOWAK

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Tuesday, April 28, 1981

Mr. NOWAK. Mr. Speaker, I have had the privilege of working with the Nikola Tesla commemorative group which was formed to coordinate and promote the observance of the 125th anniversary of the birth of this prolific scientist. The cochairmen of the group are. Nicholas Kosanovich, from my own 37th Congressional District of New York, and Dr Vladislav A. Tomovic. The Washington coordinator is my friend and former colleague, Hon. John A Blatnik, former chairman of the House Public Works Committee, on which I presently serve. The honorary chairman is William H Terbo, the grandnephew of Nikola Tesla.

Among the commemorative events scheduled are: An exhibit in the city of Buffalo May 18-22; a symposium in Yugoslavia; and exhibit and film showing in Washington, D.C. during the month of September; and a major symposium at Brock University during December.

In addition, this group has been successful, with the assistance of my predecessor, Hon. Thaddeus J Dulski of Buffalo, former chairman of the House Post Office and Civil Service Committee, in receiving a commitment for the Postmaster General William F. Bolger that a Nilola Tesla commemorative stamp will be issued in 1983.

To lend my assistance to this commemorative effort, I include in the RECORD excerpts from a speech given by Dr. Michael B. Petrovich, Professor of History, University of Wisconsin—Madison, before the Tesla Memorial Society, in Niagara Falls, July 12, 1980.

The excerpts follow:

TESLA: THE KNOWN, UNKNOWN, AND UNKNOWABLE

It would be difficult to find any important historical figure about whom so much is known, and yet who is as unknown as the American scientific discoverer Nikola Tesla (1856 1943) On the one hand here is an extraordinary man whose achievements have literally changed the face of the earth and who has received honors and recognition from all sides, from those, that is, who know and value his works On the other hand, there is a discouraging and even shocking ignorance of Tesla and his discoveries by the vast majority of people today, including millions whose own lives have been profoundly affected by Tesla's discoveries He has been called the Forgotten Genius. There is not only the known and the unknown Tesla, but the unknowable—called by some an eccentric, by others a mystic, a visionary and a person of extraordinary powers of perception And so Nikola Tesla's memory is virtually venerated by some and utterly neglected by many more. Tesla deserves to be known better.

It is not my purpose today to describe Tesla's life and works This have already been done by dozens of biographers and historians of science Perhaps it is enough merely to cite a readily available source such as the Encyclopaedia Britannica, whose 1969 edition states that Nikola Tesla was a "U.S inventor of electrical devices and equipment who introduced the first practical application of alternating current. . ." After some biographical details the article continues, "Tesla conceived the rotating magnetic field principle as an effective method of utilizing alternating current for power. He patented the induction, synchronous and split-phase motors, and new forms of generators and transformers; this equipment formed the system for the generation and use of power from Niagara Falls. By means of lectures in Europe and the United States beginning in 1891, he announced discoveries and applications of high frequency alternating current, including the high-frequency resonant transformer, or 'Tesla coil.' "

Behind this drily objective language there is a dramatic story, of a Serbian immigrant from Croatia, in Austria Hungary, who came to this land of opportunity with four cents in his pocket, and who gave to it far more than it gave to him—except freedom and opportunity, which he valued above all. The importance of Nikola Tesla's discoveries was described quite graphically by the American electrical engineer Bernard Arthur Behrend (1875-1932), himself of Swiss birth and a designer of electrical machinery and inventor Were we to eliminate from our industrial world the results of Tesla's work, the wheels of industry would cease to turn, our electric trains and cars would stop, our towns would be dark, our mills and factories dead and idle So far-reaching is his work that it has become the warp and woof of industry "

Let us turn, first, to the known Tesla, indeed, the renowned Tesla Though forgotten by many today, Tesla was honored greatly and many times, during his lifetime and after, by those who knew his worth. Let me give some examples.

In 1892 the Royal Institute in London invited Tesla to lecture there So did the Institute of Electrical Engineering in London and the Physics Society of Paris. In 1893 he lectured before the Franklin Institute in Philadelphia. This august body presented him with the Certificate of the Elliott Cresson Gold Medal Award.

A dozen institutions of higher learning conferred honorary degrees on him Columbia and Yale in 1894, the High Technical School in Vienna in 1908, the Universities of Belgrade and Zagreb in 1926, the High Technical School in Prague in 1936 the High Technical School in Brno in 1937, the Universities of Paris and Graz and the Polytechnical School in Bucharest in 1937 the University of Grenoble in 1938, and the University of Sofia in 1939.

Tesla was made a member or honorary fellow of various academic and professional societies the American Association for the Advancement of Science in 1895, the American Electro-Therapeutic Association in 1903, the New York Academy of Sciences in 1907, the American Institute of Electrical Engineers in 1917 the Serbian Academy of Sciences in Belgrade in 1937 and many others.

The medals and other honors which he received were many Among the first was the Montenegrin Medal of Prince Danilo I, awarded by Prince Nicholas of Montenegro in 1895 In 1917 the American Institute of Electrical Engineers gave Tesla the Edison Gold medal Award. He almost did not make it for the award. One story is that he skipped out during the banquet to feed his beloved pigeons in Bryant Park, behind the New York Public Library. Luckily a colleague knew of his custom and was able to bring him back in time. In 1926 Tesla received the Yugoslav Order of St. Sava, and ten years later the Yugoslav Order of the White Eagle In 1934 the City of Philadelphia awarded him the John Scott Medal Award In 1938 the National Institute of Immigrant Welfare presented Tesla with a scroll of honor as a foreign born citizen whose influence was national and international in scope, constructive in character, and purposeful in objective Tesla shared this honor with Justice Felix Frankfurter

On his 75th birthday Tesla was given a yearly pension of $7 000 from the Tesla Institute in Yugoslavia This annual stipend saved him from dying penniless in a New York City hotel room.

Perhaps none of these honors and others during his lifetime would have given him as much satisfaction as a decision of the United States Supreme Court nine months after Tesla's death which recognized that some discoveries attributed to Marconi had

actually been Tesla's previously and protected by patent. It should be noted that Tesla was not himself involved in the suit but rather companies that were using his patents. Tesla cared little for money or honors. Yet after Tesla's death in 1943 there were more honors to come. One can hardly enumerate them here.

Of special interest is the fact that the word "Tesla" became part of the language of electrical science, not only as the name of the Tesla Coil but as the term tesla for the unit of magnetic flux density. Thus the word tesla, with a small letter "t," is in the same class with terms such as ampere, ohm, volt, and watt, all of which have become so much a part of our language that we scarcely remember that they were all the names of great men. Tesla shares this honor with two other Americans, Joseph Henry (1797-1878) and the Italian American physicist Enrico Fermi (1901-1954) after whom the henry and the particle fermion have been named.

In 1952 a bronze replica of a bust of Tesla was unveiled at the Technical Museum in Vienna. It is a copy of the original by the famed Croatian and Yugoslav sculptor Ivan Meštrović, which is in the Yugoslav Academy of Arts and Sciences in Zagreb.

In 1952 there was also established the Nikola Tesla Museum in Belgrade, Yugoslavia. It was opened to the public in 1956 on the 100th anniversary of Tesla's birth. It is a magnificent monument to Tesla's memory and a fitting resting place for his ashes. The Tesla Museum contains not only various exhibits and mementoes of Tesla's life but a library and archives arranged in six groups: (1) personal and biographical data, (2) correspondence, (3) scientific papers, (4) diplomas, testimonials, honors, news articles, (5) technical drawings and plans, and (6) photographs. The director, Dr. Veljko Korać, and his staff deserve praise and gratitude for their work. In 1956 the Tesla Museum, under the auspices of a National Yugoslav Committee and the Society for the Promotion of Science and Technology, organized a round of commemorative activities celebrating the 100th anniversary of Tesla's birth. Among the distinguished guests who gathered in Belgrade for the occasion were Niels Bohr of Denmark, Arthur Fleming of Great Britain, Frederik Dahlgren of Sweden, and Carl Chambers and Richard Sogg of the United States. The last two came as the representatives of the American Institute of Electrical Engineers and brought a special citation with them.

The 1956 observance had a very tangible and useful result when the Tesla Museum of Belgrade published a mammoth volume, in English, entitled "Nikola Tesla: Lectures, Patents, Articles." Much of the volume reproduces in their original form various patents and other documents. In 1961 the Tesla Museum published a second significant work, "Tribute to Tesla," which contains the views and evaluations of Tesla's achievements by noted scientists and specialists from all over the world.

In October 1956 the American Institute of Electrical Engineers held its own commemorative meeting in Tesla's honor. The Chicago [illegible] of that organization held a similar [illegible] on October 1, 1956 which was designated by Mayor Richard Daly as Nikola Tesla Day. Similar tribute was paid to Tesla on his centennary by the city of Philadelphia. President Tito of Yugoslavia was informed of these American festivities by the then United States Secretary of State John Foster Dulles. In his reply of thanks, President Tito wrote, "I would especially like to stress my accordance with your statement that scientists of Tesla's genius are the symbol of the universality of science and human endeavor for progress in peace."

In 1976 there was another series of commemorative festivities in honor of Tesla, all the more impressive because the 120th anniversary of Tesla's birth coincided with the 200th anniversary of the birth of the United States, the Bicentennial. A joint Yugoslav-American committee of some twenty-five members was formed in 1975 to coordinate activities. Again there were several noteworthy results. In January 1975 Tesla was included in Washington's Hall of Fame. A year later a Nikola Tesla Prize was instituted by the IEEE, the leading society of electrical engineers in the United States. The first prize was awarded to Leon T. Rosenberg, to whom the Yugoslav Nikola Tesla Society also awarded a gold plaque. In July 1976 a tablet was unveiled at Shoreham, Long Island, on the site where Tesla's wireless tower used to stand. The tablet reads:

"In this building designed by Stanford White, architect, Nikola Tesla, born Smiljan, Yugoslavia 1856—died New York U.S.A. 1943—constructed in 1901-1905 Wardenclyffe, huge radio station with a dome tower 187 feet high (destroyed 1917), which was to have served as his first world communication system.

"In memory of 120th anniversary of Tesla's birth and 200th anniversary of the U.S.A. Independence July 10, 1976."

Peggy McKinnon Clark of Shoreham deserves special thanks for her tireless efforts on behalf of this project.

On July 23, 1976, there took place the unveiling of the heroic-sized monument to Nikola Tesla, by the eminent Yugoslav sculptor Frano Kršinić, in Niagara Falls on Goat Island in the picturesque courtyard of the old Edward Dean Adams Hydro Electric Power Station Number One of the Niagara Falls Power Company. The event commemorated Tesla's successful use of alternating current to provide electrical power at long distances from the source.

Meanwhile in Yugoslavia a whole series of cultural events marked Tesla's 120th anniversary. Chief among these was the Symposium held on July 7-10, 1976 in Zagreb and in Tesla's birthplace, the village of Smiljan, Lika. President Tito attended the festivities in Smiljan on July 10. The Symposium brought together some four hundred participants, including noted scientists from the whole world. In honor of the event the Niagara Mohawk Power Corporation of Syracuse, N.Y. presented the Tesla Museum in Belgrade with some artifacts from the Edward Dean Adams Generating Station at Niagara Falls. The certificate of presentation reads: "This corporation takes pride in the fact that its predecessor, the Niagara Falls Power Company, pioneered the use of the polyphase alternating current system invented by Dr. Tesla. That principle, proved in operation at the Adams Station in 1895, made modern electric power systems possible."

Several important publications resulted from these meetings. A bi-lingual volume of Tesla's writings—Moji pronalasci, My Inventions—was published in Zagreb in 1977 by the Yugoslav Academy of Arts and Sciences, the Nikola Tesla Museum in Belgrade, and the Skolska Knjiga Publishing House of Zagreb. More recently, in 1977, the Nikola Tesla Museum had the Belgrade publishing house NOLIT put out a luxurious edition, all in English, called Nikola Tesla: Colorado Springs Notes 1899-1900. This is Tesla's research diary which he kept during his daring experiment of transmitting high frequency electrical energy without wires on a global scale.

There are today many books and articles concerning Tesla, in English and in other languages, including several biographies. Though there is much yet that can be written about Tesla and his work, no one can plead ignorance of Tesla on the grounds that there is no information about him. There is, indeed.

It is precisely because the known Tesla has been so honored and recognized in the world of science, and because there is material available about him today that the general ignorance on the part of most Americans that he ever existed is so astonishing and bewildering.

And how are Americans ever to learn about Tesla if their schools and textbooks and libraries do not teach them? For example, the excellent World Book Encyclopedia, which is used extensively in our public schools, contains four inches on Tesla, and only up to 1900, with nothing on the last thirty-four years of his life. The justly noted Encyclopaedia Britannica publishes an annual Yearbook as well as a special Yearbook of Science and the Future. These are big, thick volumes that are supposed to incorporate all that occurred of any importance in the scientific world. Yet one looks in vain in them for any mention of Tesla or the Tesla Prize in the volumes for the 1970's.

And so we have this strange paradox. On the one hand Tesla is unknown to millions of Americans today though they know the name of Edison, Telsa's first American employer and later competitor. On the other hand, Tesla is the object of veneration by cultists who see in him a kind of Superman, even from another planet. But between this unknown Tesla of the uninformed and the unknowable Tesla of the cultists there is the known Tesla, whose works are daily manifested in our lives. Even as we sit here, in Niagara Falls, next to the electric station which his motors powered, we are literally basking in Tesla's light. When, in 1917, Tesla was awarded the Edison Medal of the American Institute of Electrical Engineers, his close associate B. A. Behrend paraphrased Alexander Pope's famous line on Sir Isaac Newton when he said:

Nature and Nature's laws lay hid in the night. God said, Let Tesla be! and all was light.

It is to make him the known Tesla that we are here today to honor this extraordinary man, this truly immortal scientist.

NIKOLA TESLA
This electrical genius
invented the world's first induction motor
Nikola Tesla
USA
FIRST DAY OF ISSUE
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NIKOLA TESLA

EDWIN ARMSTRONG
PHILO T. FARNSWORTH
Honoring
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THE INVENTOR'S ENVIRONMENT

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

THE NATIONAL MUSEUM OF AMERICAN HISTORY
SMITHSONIAN INSTITUTION

21 September 1983

THE INVENTOR'S ENVIRONMENT

Host

Bernard S. Finn
Curator, Division of Electricity
National Museum of American History

Moderator

James B. Owens
President
The Institute of Electrical and Electronics Engineers

Speakers

Ronald R. Kline
"Charles P. Steinmetz: Invention in the Corporate Environment"

James E. Brittain
"Edwin H. Armstrong: An Independent Inventor in a Corporate Age"

Panelists

Nathan Cohn

Anthony J. DeMaria

Jerome J. Suran

Charles H. Townes

THE PARTICIPANTS

"The Inventor's Environment" has been organized in honor of the issuance of four postage stamps recognizing the contributions of America's electrical inventors and engineers and featuring Nikola Tesla, Charles Steinmetz, Edwin Armstrong and Philo Farnsworth. This symposium brings together professional historians and distinguished engineer-inventors to explore issues of historical interest and current concern.

James E. Brittain received his B.S. degree from Clemson University and his M.S. from the University of Tennessee, both in electrical engineering. His academic credentials in the history of science and technology include the B.A. and Ph.D. degrees from Case Western Reserve University. Dr. Brittain taught electrical engineering at Clemson University from 1959 to 1966 and has taught the history of science and technology at the Georgia Institute of Technology since 1969. A former chairman of the IEEE History Committee, he has served on a number of committees and editorial boards in both technical and historical organizations. His published works include studies of such figures as E.F.W. Alexanderson and Michael Pupin.

Ronald R. Kline received his B.S. degree in electrical engineering from Kansas State University and his M.A. and Ph.D. degrees in the history of science from the University of Wisconsin, Madison. Before embarking on his historical studies, he worked as a Field Engineer and Systems Analyst with General Electric Ordnance Systems. Dr. Kline was an IEEE History Fellow in 1979-1980, during which time he researched his doctoral dissertation on the career of Charles P. Steinmetz. He now teaches in the Department of General Engineering, University of Wisconsin, Madison.

Nathan Cohn received his S.B. degree from the Massachusetts Institute of Technology in 1927 and joined the Leeds & Northrup Company that same year. Advancing through the company's hierarchy, he retired as a Company Director in 1975. Focusing his career on the control of interconnected electric power systems, Mr. Cohn established many of the fundamental concepts and techniques now in widespread use for automatic control of power generation and flow. In 1982, the IEEE recognized his contributions by awarding him the Edison Medal. Mr. Cohn shares this honor with Nikola Tesla, who received the Edison Medal from the American Institute of Electrical Engineers in 1916. Mr. Cohn's other awards include the IEEE Lamme Medal, the Franklin Institute Wetherill Medal, and the Instrument Society of America Sperry Medal. He is a Life Fellow of the IEEE and of the Franklin Institute, and an Honorary Member of the Instrument Society of America. He has served on several IEEE committees and is currently a member of the IEEE Centennial Task Force.

ers
ronment"
orate Age"

Anthony J. DeMaria received both his B.S.E.E. and Ph.D. degrees from the University of Connecticut, earning his M.S. at Rensselaer Polytechnic Institute. He joined the United Technologies Research Center in 1957, where he attained the position of Manager of Electromagnetics and Physics in 1974. Dr. DeMaria was the first to report experimental results in controlling the output of lasers with acousto-optic devices, and established important foundations for the picosecond laser pulse field. This work brought him the IEEE Morris N. Liebmann Award in 1980, an honor which was also conferred upon Philo T. Farnsworth by the Institute of Radio Engineers in 1941. Dr. DeMaria has published over 35 papers in the field of quantum electronics and has been granted 25 patents for innovations in quantum electronics, fiber optics, and acoustics. He was the Editor of the IEEE Journal of Quantum Electronics and a member of the Board of Directors of the Optical Society of America. He is a Fellow of the IEEE, the Optical Society of America, the Connecticut Academy of Sciences, and the National Academy of Engineering.

Jerome J. Suran was awarded the B.S.E.E. degree by Columbia University in 1949, and continued graduate studies there and at the Illinois Institute of Technology. After holding engineering positions at the J.W. Meaker Company and at Motorola, he joined the Electronics Laboratory at General Electric in 1952, where he was concerned with the development of solid state devices and circuits and with the management of several laboratory operations. His pioneering work in solid state technology and in the development of an implantable heart pacemaker was recognized by Syracuse University with an honorary doctorate in 1976. Dr. Suran has coauthored two books on transistor circuits, published 40 papers in professional journals, and received 18 patents. He has long been active in IEEE affairs at both the local and national levels. In 1979, he served as IEEE president, joining an impressive group that includes Charles P. Steinmetz who was president of the American Institute of Electrical Engineers during 1901-1902.

Charles H. Townes received a B.S. degree in Physics and a B.A. degree in Modern Languages from Furman University in 1935. He subsequently earned his M.A. in Physics from Duke University and his Ph.D. from the California Institute of Technology. He joined Bell Laboratories during World War II, working on radar and microwave spectroscopy. In 1948, Dr. Townes was appointed to the faculty of Columbia University, where, continuing his research in microwave physics, he developed the first maser (microwave amplification by stimulated emission of radiation) device in 1954. After showing theoretically that masers could be made to operate in the optical and infrared regions, Dr. Townes and Dr. Arthur L. Schawlow jointly patented optical and infrared masers, or lasers (light amplification by stimulated emission of radiation). In 1964, Dr. Townes and two Russian scientists who had independently conceived the maser were awarded the Nobel Prize in Physics. Dr. Townes has received numerous other awards, including the IEEE Medal of Honor in 1967, a distinction he shares with Edwin H. Armstrong, recipient of the first Institute of Radio Engineers Medal of Honor in 1917. Dr. Townes is a Fellow of the IEEE, the American Physical Society, and the Optical Society of America.


РЕПУБЛИКА СРПСКА КРАЈИНА
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OF THE BIRTH
OF NIKOLA TESLA


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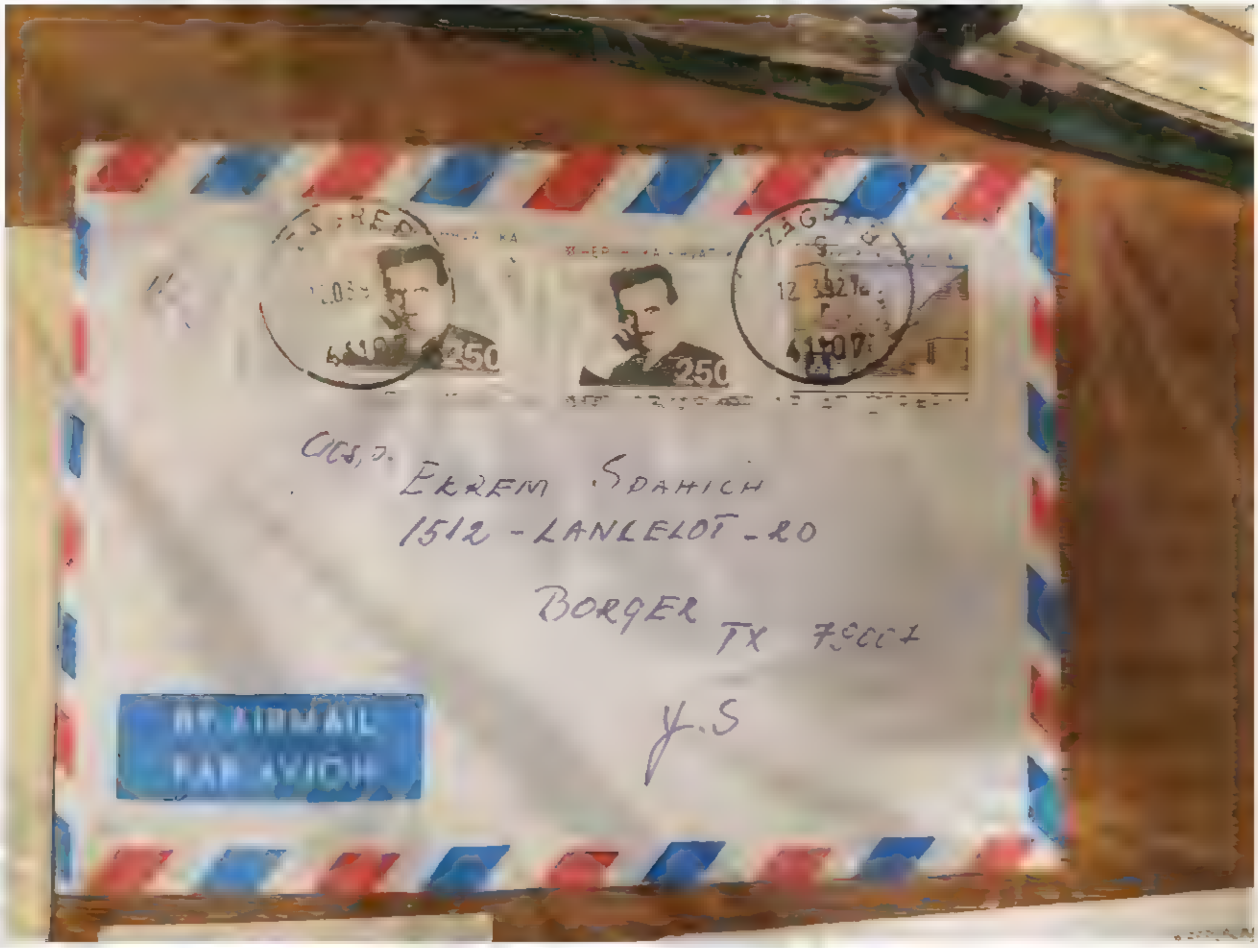
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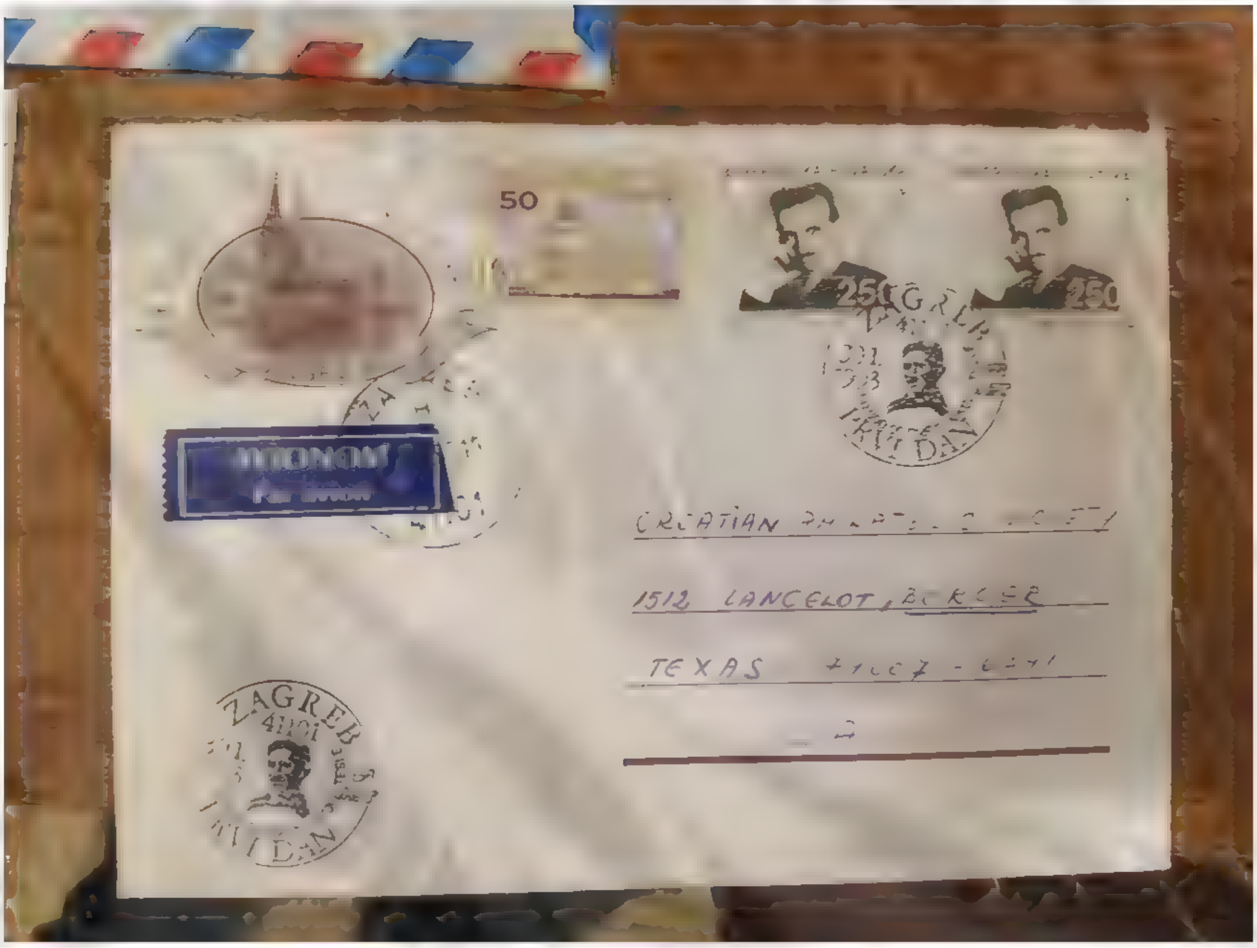
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500

356.

Lloyd Espenschied
[illegible]
[illegible]

[illegible] April 1967

[illegible]
[illegible]

Re: Tesla's Tower on Long Island

Dear [illegible]:

Please [illegible] my letter on [illegible] subject of [illegible] and [illegible]:

[illegible] announcement in [illegible], [illegible], that [illegible] article on "Tesla's tower out on Long Island", quite [illegible], [illegible] the following.

[illegible], a classmate [illegible] Pratt Institute, Brooklyn, N.Y. one [illegible], [illegible] Wading River, near [illegible], L.I., [illegible] of my [illegible] Tesla. [illegible] to accept [illegible] invitation, [illegible] so upon learning that [illegible] the care-taker of the place [illegible] could [illegible] in.

[illegible] the premises [illegible] to be unoccupied by [illegible] except the care-taker-watchman. [illegible] Tesla [illegible] felt free to [illegible] about. [illegible] years afterward did I learn Tesla had run out of money and that the place was practically abandoned.

The first feature of attraction was, of course, the staunch tower with its dome-like top,- evidently intended to [illegible] corona for the excessively high voltage r.f. excitation intended. Tesla's [illegible] intention, it will be remembered, was to charge the whole earth electrically and set up standing waves around it for power distribution, [illegible]. There was no evidence of how he was to drive the tower electrically, for the thing was not finished. There was a rumor of [illegible] the tower a hole as deep as was the tower high (200 feet) for the ground connection. Tesla had been the first to show the vertical [illegible] combination for wireless, but this seemed fantastic. So did the whole plant, in afterthought. But who was I, an [illegible] amateur to question what was being undertaken by that notable inventor?

The nearby building was fair-sized, of substantial brick construction. Within, the [illegible] was a revelation, more a weird laboratory than [illegible] station. The main gallery was filled with equipment, some [illegible]: some rotating machines, but mainly large air-core inductances and capacitors, [illegible] Tesla Coils". Would that I could identify the units more precisely. Another type of apparatus [illegible] with a vacuum pump, glass-working tools [illegible] gas-filled tubes. To one side was the machine shop, with lathes, [illegible] wood-working and metal-working machines, a delight to [illegible] of a [illegible]-it-[illegible] amateur. Near the main entrance on a table was a boat-model, evidently the famous radio-controlled one [illegible] and was filled with [illegible] made electro-mechanical [illegible]. The watchman said it had been out in the LI Sound, but it [illegible] like a land-lubber. The whole [illegible] seems like a dream, and perhaps it was already becoming so to Tesla himself!

Lloyd Espenschied - Lloyd

LLOYD ESPENSCHIED
99 82ND ROAD NEWBOLD PLACE
KEW GARDENS, NEW YORK 11415

5 November 1968

Mr. Leland I. Anderson
1700 Eldridge Ave. West
St. Paul, Minn. 55113

Re Tesla

Dear Mr. Anderson:

A pleasure it was to have met you and heard your discourse on Tesla on 5 October last during the old timer's radio history conference, at Washington DC.,4 to 6 October. Certainly you [illegible] corraled a nice collection of Tesla pictures, and I enjoyed seeing them.

Now I have the reprint you kindly sent on "Warden-clyffe - A Forfeited Dream", from the Long Island Forum of Aug. & Sept. 1968. That makes an appropriate recalling of that venture, of what was known as [illegible] when I visited the place in 190[illegible]. Little did I then know [illegible] "in hock", although the care-taker told us the [illegible] condition [illegible] due to Tesla having lost interest. Again, [illegible] information [illegible] me and of which I'm glad to know. Congratulations [illegible] your industry in digging out the facts.

If your searching appetite is still keen, let me make a suggestion: study and report upon the environment in which Tesla worked, the environment that was so suggestive to him, the contributions of others which led him on and, with his natural imagination, made him wild, as it were. In the field of power transmission, and a.c. power in particular, he seems to have derived his stimulation in Europe, including the rotating magnetic field idea,- as is well indicated by Georg Siemens in his book "History of the House of Siemens", 2 vols, pub. 1957 by Karl Alber, Freiburg/Munich, pgs. 114-123. Tesla appears to have had one hell of an ego, was able to extract money from rich folks through spectacular demonstrations and promises. Better so than taking the money from credulous widows and the like as did Lee deForest! [illegible] There was always an air of false mystery about Tesla that caused one [illegible] about his honesty. He gave precious little credit to others. [illegible] tube displayes, variuos forms of Geisler tubes and the like never, to my knowldedge. were accompanied by references to the earlier workers and literature. Likewise in his would-be wireless experiments there was never the mention of Hertz et al.

Biographies in general are gross distortions in a historical sense, for they take the individual out of the context of the advance which carried him along. ~~the individual~~. A biography should be set in the middle of the"environment" of the time. Yet, who would take the trouble to read such truer picture? Take Ben Franklin's electrical experiments,- they were in general mere copies of those that had been made in Europe, yet all good Americans know he was an electrical wizard,- for he had the power of the press. So goes history,- so cheer up !

With personal best wishes,

Lloyd Espenschied

Copy to Bruce Kelley

Columbia University
in the City of New York
[NEW YORK 27 N. Y.]
DEPARTMENT OF ELECTRICAL ENGINEERING

August 15, 1953

Mr. Leland I. Anderson
127 Seymour Avenue Southeast
Minneapolis 14, Minnesota

Dear Mr. Anderson:

I was much interested in your letter concerning Dr. Nikola Tesla and it has occurred to me that perhaps your organization might be interested in an appreciation of his work I wrote shortly after the time of his death. A reprint of the article is enclosed herewith.

In respect to the other matters mentioned in your letter, I would appreciate some additional time to make a more careful study of them.

Very sincerely yours,

Edwin H. Armstrong

Edwin H. Armstrong

EHA:ek
Enclosure

Columbia University
in the City of New York

November 16, 1953

Mr. Leland I. Anderson
127 Seymour Avenue Southeast
Minneapolis 14, Minnesota

Dear Mr. Anderson:

I quite approve of your undertaking to see that the name of Nikola Tesla is not forgotten and that he is accorded recognition for the very great things that he did. His inventions of the polyphase system of electrical transmission and the induction motor are the basis in the United States of our electric power industry, and the greatness of the Westinghouse Electric Company of today was founded on those inventions.

Not only did he teach by accomplishment, but he taught by the inspiration of a marvelous imagination that refused to accept the permanence of what appeared to others to be insuperable difficulties:- an imagination the goals of which, in a number of instances, are still in the realm of speculation.

By his writings on the problem of signaling without wires, he fascinated and inspired some of the early workers in the field, Marconi perhaps himself included. However, as I think I pointed out in my "Appreciation" of his work, he failed to conceive or to experimentally discover that vital idea uncovered by Marconi which brought practical wireless signaling into being. I have pointed out if he had gone ahead on the basis of his erroneous theory, he would have been very likely to have discovered the principle that Marconi did uncover and so would have become known as the inventor of wireless telegraphy. But this he failed to do and so the credit quite properly goes to Marconi.

In my opinion, it would be a great mistake to try to establish Tesla as the inventor of wireless signaling. His fame is secure on the basis of his accomplishments in the power field, and as a prophet of the possibility of wireless, and of wireless controlled engines of war.

Mr. Anderson Nov. 16, 1953

If you would like to have my analysis as to why Tesla failed to uncover the vital secret that made Marconi's work a success, I will be glad to send it to you in detail. I have had occasion to discuss it with a number of radio people who have raised the question in the past, and I am quite sure they have been satisfied my analysis of the situation is a correct one.

Very truly yours,

Edwin H. Armstrong

EHA:ecw

Edwin H. Armstrong

P.S. In my "Appreciation" of the work of Tesla which came during wartime, there was much research under way toward reducing the Tesla concept of the guided weapon in various laboratories - I considered it inadvisable to draw any attention to the subject by reference to Tesla's early concept of the matter. So far as I know, the credit for the concept rests entirely with him.

EHA

E. H. A.

Columbia University
in the City of New York
NEW YORK 27, N.Y.
DEPARTMENT OF ELECTRICAL ENGINEERING

November 20, 1953

Tesla International
University Station
Box 135
Minneapolis 14, Minnesota

Gentlemen:

In accordance with your offer, I would appreciate your sending me a copy of the reprinted book entitled, "The Inventions, Researches and Writings of Nikola Tesla".

My check in the sum of $4.00 is herewith enclosed.

Thanking you, I am

Very truly yours,

Edwin H. Armstrong

Edwin H. Armstrong

EHA:ecw

Encl.

Major Edwin H. Armstrong
(1927), the inventor of fre...


E. H. ARMSTRONG

...trical Engineering. He re...

...fellowship at C...
and continued his work, be...
1914, with Professor Michael I...
at the Marcellus Hartley R...
Laboratory. From 1917 ...
served in the A.E.F. with the...
Corps. He re...
tor of Science from Colu...

...tion in 1937, continu...
until his death.

Major Armstrong was th...
to... four of the most impor...
... in radio developme...
invented the regenerative c...
development which made...
loud speaker reception. In 19...
he was ... with the Signal...
he developed the superheter...

THE NEW YORK TIMES, TUESDAY, FEBRUARY 2, 19..

Major Armstrong Dies in Leap; Invented FM Broadcast System

Radio Pioneer, 63, Plunges From River House Suite —Left Note to Wife

Maj. Edwin H. Armstrong, whose inventions provided much of the basis for modern broadcasting, was found dead...

...farewell to his wife was found in the apartment... Necten, assistant medical examiner, listed the case as a suicide.

...Mrs. Armstrong had been with a sister, Mrs. Marjorie Tuttle, of Granby, Conn., for a number of weeks. Three servants had gone out after serving lunch to the inventor Sunday afternoon.

In his message to his wife, the...


Maj. Edwin H. Armstrong

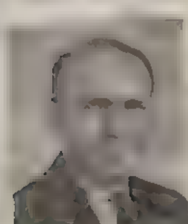
...former Miss Marian MacInnis. Major Armstrong said that he was heartbroken at being unable to see her once again, and expressed deep regret at having

Continued on Page 13, Column 4

...gether. ...
keep you and ... on my soul.

The major's body was ... clothed, even to hat, overcoat... gloves when it was found ... after 10 A. M. ... River House employe... Mrs. ... had entered the Armstrong apartment ... work as usual ...

The appointment of Arthur ... (M'11) as a vice president o... Alexandria, V..., a subsidiary of a ... laboratory ... inghouse ...


... WEIR

... bama Polytechnic ... stitute in ...

Major Armstrong Dies in Leap; Invented FM Broadcast System

Radio Pioneer, 63, Plunges From River House Suite —Left Note to Wife

Maj. Edwin H. Armstrong whose inventions provided much of the basis for modern broadcasting, was found dead yesterday morning on a third-floor balcony of River House, 435 East Fifty-second Street. The 63-year-old electrical engineer had plunged from a window of his luxurious thirteenth-floor apartment, apparently late Sunday evening or during the night.

A two-page note, a penciled farewell to his wife, was found in the apartment. Dr. Emanuel Neuren, assistant medical examiner, listed the case as a suicide.

According to detectives of the East Fifty-first Street station, Major Armstrong had been alone after about 1 P. M. on Sunday. Mrs. Armstrong had been with a sister, Mrs. Marjorie Tuttle, in Granby, Conn., for a number of weeks. Three servants had gone out after serving lunch to the inventor Sunday afternoon.

In his message to his wife, the former Miss Marian MacInnis, Major Armstrong said that he was heartbroken at being unable to see her once again, and expressed deep regret at having

Maj. Edwin H. Armstrong

Continued on Page 13, Column 4

riginal West
uilt by him
ssex County,

MAJOR ARMSTRONG TAKES LIFE IN LEAP

Continued From Page 1

hurt her, the dearest thing in his life He said he would gladly give his life to turn back to the time when thye had been so happy together He concluded: "God keep you and Lord have mercy on my soul"

The major's body was fully clothed, even to hat, overcoat and gvoves, when it was found soon after 10 A. M. yesterday by a River House employe A secretary, Mrs. Edna Wolk, had entered the Armstrong apartment for work as usual about 9 o'clock but had assumed that her employer had not yet arisen. Since

England and ... Frequency ... used to ... of television ...

Major Armstrong ... Medal for Merit and ... professional honor ... Medal of Honor of the Institute of Radio Engineers

DOUGLAS ASKS CURB ON POLISH IMPORTS

WASHINGTON Feb 1 ... — Senator Paul H Douglas Democrat of Illinois urged the Administration today to ban ... from Communist Poland and stop the shipment of American ... packages that might finance subversive activities in the United States.

He based his demands ... Government ... to put ... imports ... beginning next ...

HEART

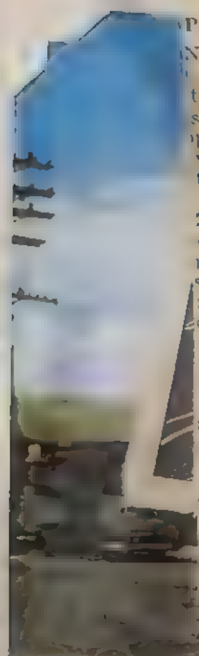
Boy 3 ... by Fellow

...about with wires of porcelain and metal ... and soldering ... strange little ... to a safe and ... piece of glass ... into the ... more fever ... All right, Harvey, ... did so, the room ... light. It can ... studied the glass ... He put his mou... ...ously.

...the state ... amount ... nities for ... under the ... person in ... by the act ... state's con-

Present

New York ... persons ... take part ... s entirely ... appropriate ... would in ... the state ... Present 250,000 a ... would ... jects ap... local ... nally by ... of Mental



Original ... built by ... Essex Coun...

alarmed.

When Major Armstrong's body was found, Mrs. Wolk sent word to Mrs. Armstrong who returned to the city immediately.

Friends said the strained relations between the couple had not seemed basic, but were concerned with Mrs. Armstrong's wish that he relax his lifelong devotion to his researches and invention, and to the litigation that grew out of them.

A friend estimated yesterday that 90 per cent of the inventor's time had been spent in recent years on suits against the Radio Corporation of America, the National Broadcasting Company, and other leaders in broadcasting and the manufacture of transmitting and receiving equipment. Whether these suits are to be pressed now must be decided by the executor of Major Armstrong's estate. If successful they probably would win several millions of dollars.

Was Columbia Professor

Major Armstrong was born here on Dec. 18, 1890, the son of John and Emily Armstrong. His father was American representative of the Oxford University Press, some of whose publications helped arouse his interest as a youth, in the then infant radio. Motorcycling from the family's new home in Yonkers to classes at Columbia University, the young Armstrong studied under Prof. Michael I. Pupin, whom in 1934 he succeeded as Professor of Electrical Engineering. He held the position at his death.

... degree in electrical engineering in 1913, the young man already had devised a regenerative circuit that brought him much acclaim among engineers, and a patent controversy with Dr. Lee De Forest, inventor of the audion tube. The circuit, called a feed-back, involved feeding back a radio signal to the audion tubes, and strengthening a weak signal to the point where long-distance radio reception became practical.

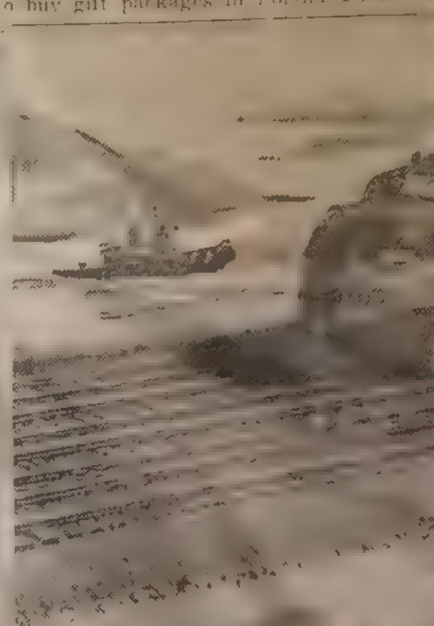
As a signal officer in the Army in World War I, Major Armstrong developed ideas that led to his design for the superheterodyne circuit that is considered basic to radio receivers today. Later, in 1920, he devised the super-regenerative circuit, vital to two-way police and aircraft radio systems.

In 1939 Major Armstrong perfected his system of producing static-free radio through frequency modulation, now used widely in this country, generally in Germany and increasingly in

...impressions of the years in which ...

... dollars to ... activity and groups in this country."

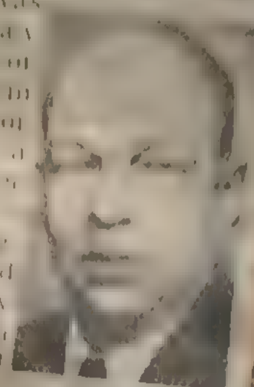
In New York the managing director of Pekao, Walter T..., said the corporation's activities were exempt from the new tax because it did not purchase anything in this country, but merely used American money donations to buy gift packages in Poland.



Plan Spring T... beyond ... SHADO... of a dou...

Radio Inventor Dies in Plunge

NEW YORK (AP) — Maj. Edwin H. Armstrong, inventor of many of the world's basic radio patents, was killed today when he fell or jumped from his 13th floor apartment in swanky River House.

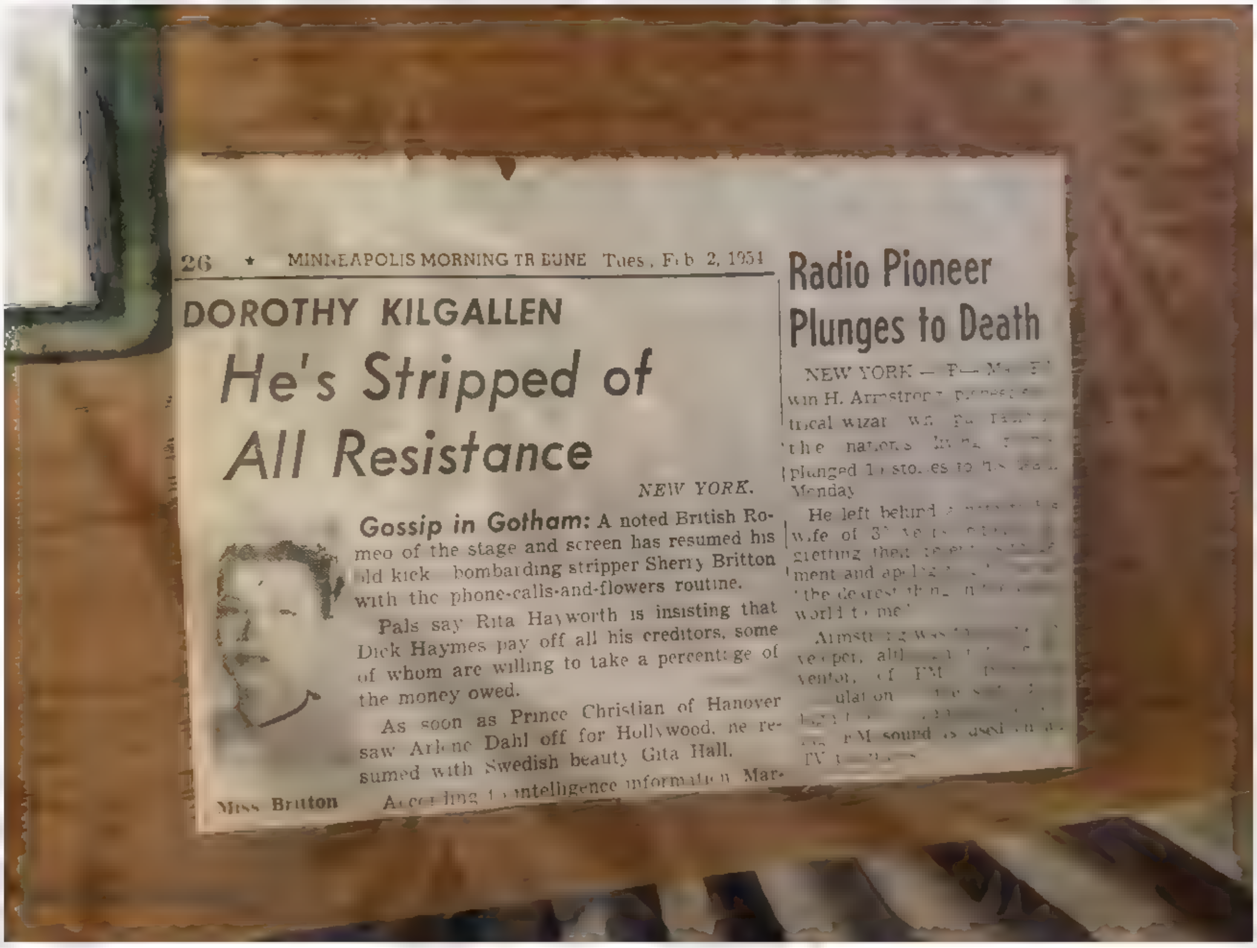


Armstrong

Armstrong, 63, developed the frequency modulation (FM) system of broadcasting. He also invented the super-heterodyne and super-regenerative circuits which are the basis of virtually all radio receivers.

His body was on a third floor balcony.

Police said Armstrong left a two-page note addressed to his wife, Esther. She was reported staying with friends at Granby, Conn.



26 ★ MINNEAPOLIS MORNING TRIBUNE Tues., Feb. 2, 1954

DOROTHY KILGALLEN

He's Stripped of All Resistance

NEW YORK.

Gossip in Gotham: A noted British Romeo of the stage and screen has resumed his old kick—bombarding stripper Sherry Britton with the phone-calls-and-flowers routine.

Miss Britton

Pals say Rita Hayworth is insisting that Dick Haymes pay off all his creditors, some of whom are willing to take a percentage of the money owed.

As soon as Prince Christian of Hanover saw Arlene Dahl off for Hollywood, he resumed with Swedish beauty Gita Hall.

According to intelligence information Mar-

Radio Pioneer Plunges to Death

NEW YORK — [illegible] — [illegible] win H. Armstrong, [illegible] trical wizard [illegible] the nation's [illegible] plunged 1[illegible] stories to his death Monday.

He left behind [illegible] wife of 3[illegible] [illegible] getting them [illegible] ment and apolog[illegible] "the dearest thing [illegible] world to me."

Armstrong was [illegible] veloper, alth[illegible] ventor of FM [illegible] ulation [illegible] [illegible] FM sound is used in all TV [illegible]

IRE People

Major Edwin H. Armstrong (A'14–F'27), the inventor of frequency modulation and one of the leaders in radio development, died recently.

E. H. ARMSTRONG

Major Armstrong was born in New York City on December 18, 1890. He entered Columbia University in 1909, and in 1913 he received his Bachelor's degree in Electrical Engineering. He remained at Columbia [illegible] in the Department of Electrical Engineering for one year. In 191[illegible] he received the [illegible] Fellowship at Columbia, and continued his work, [illegible] in 1914 with Professor [illegible] Pupin at the Marcellus Hartley Research Laboratory. From 1917–1919 he served in the A.E.F. with the Signal Corps. He received the degree of Doctor of Science from Columbia University in 19[illegible] and became Professor of Electrical Engineering [illegible] in [illegible] 1934 continuing in this post until his death.

Major Armstrong was the [illegible] of the [illegible] important [illegible] development. In 1913 he [illegible] the regenerative circuit, a development which made possible [illegible] reception. In 1918, while [illegible] with the Signal Corps, he developed the superheterodyne receiver circuit, which is used universally in ordinary radio receivers. The super regenerative receiver circuit which he invented in 19[illegible], provided even greater amplification and made high frequency short wave [illegible] effective. As early as 1914 he began looking for a static eliminator, and by 1933 his experiments led him to the invention of the system of frequency modulation which eliminated electrical disturbances and brought about a marked increase in radio [illegible]. His most recent work was in the development of a system of multiplexing FM so that more than one program could be sent out simultaneously on the same wavelength.

Major Armstrong had published many technical articles in the Proceedings of the I.R.E. and other professional journals. He was the recipient of a Presidential citation for his contribution to military communications, and in 1919 was made a Chevalier de la Legion d'Honneur. His other honors included the first Medal of Honor of the I.R.E. awarded in 1917, the [illegible] Medal [illegible] University, 19[illegible], the "Medal Pioneer" Plaque, National Association of Manufacturers, 1940, the [illegible] Medal, American Society of Mechanical Engineers, 1940, the Franklin Medal, Franklin Institute, 1941, the John Scott Medal, Board of City Trusts, City of Philadelphia, 1941, the first Armstrong Medal from the Radio Club of America, 193[illegible], and the Medal for Merit, 1947.

The [illegible] of **Arthur C. Weld** [illegible] Melpar, Inc., [illegible] Westinghouse Air Brake [illegible] Mr. Weld [illegible] Melpar since 194[illegible] [illegible]

Caricature of Thomas Edison
The "Edison Method!"

MINNEAPOLIS TRIBUNE June 17, 1957

Day Brightener:

Bill Powell of Pillsbury tells about Edison, and how he worked extremely long hours, and refreshed himself with quick cat-naps, and woke up each time bursting with energy and ready for work.

He sprang up from such a nap one evening and called to his laboratory assistant:

"Harvey! This is the night we invent the telephone!"

He commanded Harvey to get out all the lab notes on the telephone and tell him how many experiments they had conducted. Harvey lighted the oil lamp, consulted the notes, and came up with the figure 3,247.

"All right," said Edison, "make this entry: "No. 3,248. Mr. Edison completes his experiments and successfully invents the telephone. Now let's get to work."

He started bustling about with wires of various sizes and bits of porcelain and metal. There was much wrapping and soldering. Long wires were connected to a strange little hole in the wall. Then Edison went to a safe and brought out a large, strangely shaped piece of glass, and inserted some of the parts and wires into the hollow center of the glass. After some more feverish work, he finally commanded: "All right, Harvey, throw the switch!"

As Harvey did so, the room was filled with a strange, brilliant light. It came from inside the glass. Edison studied the glass a moment, then approached it. He put his mouth very close to it and said, cautiously:

"Hello . . ."

TESLA SAYS EDISON WAS AN EMPIRICIST

Electrical Technician Declares Persistent Trials Attested Inventor's Vigor.

HIS METHOD INEFFICIENT

A Little Theory Would Have Saved Him 90% of Labor, Ex-Aide Asserts —Praises His Great Genius.

Nikola Tesla, one of the world's outstanding electrical technicians, who came to America in 1884 to work with Thomas A. Edison, specifically in the designing of motors and generators, recounted yesterday some of his impressions of the years in which he had worked with the inventor.

"Edison was by far the most successful and, probably, the last exponent of the purely empirical method of investigation," he said. [illegible] thing he achieved [illegible] persistent [illegible] often performed at [illegible] ways attesting [illegible] and res[illegible] [illegible] combinations and [illegible] ulate them and [illegible] whole [illegible] with [illegible] tained [illegible]. His mind was dominated by but one idea [illegible] stone unturned, to exhaust every possibility.

"If he had a needle to find [illegible] [illegible] after [illegible] he [illegible] of his [illegible] [illegible] We experiments [illegible] was made up of [illegible] elementary [illegible] not [illegible] after a [illegible] intelligence [illegible] wa[illegible]

[illegible] a [illegible] just a [illegible] would have saved him 90 per cent of the labor. [illegible] and [illegible] himself entirely to [illegible] practical A[illegible] [illegible] the [illegible] actual [illegible]

[illegible] and [illegible] of the [illegible] seem to make [illegible] impossible. He will occupy a unique and exalted position in the history of his native land, which [illegible] well be proud of his great [illegible] and [illegible] achievements in [illegible]

NEW YORK TIMES

NEW YORK TIMES
October 19, 1931

Original West Orange Laboratory of Thomas A. Edison built by him and first occupied in November, 1887. Essex County, New Jersey.


Thomas A Edison
THOMAS EDISON "umbrella" signed card

Thomas Edison with his talking machine. At the time of his death, Edison had more than 1200 patents actually granted, according to records of the Patent Office.

Form 94. 10 6-15-2500 (2-10324)

STATE OF NEW YORK

Office of the Secretary of State

CORPORATION BUREAU

Albany, August 9, 1916

Geo. Schereff, Esq.,
Secy., Nikola Tesla Co.,
8 West 40th St., N. Y. City.

Dear Sir:

Enclosed herewith please find check for $ 1.25, the amount of overpayment of fees in relation to the certificate of incorporation of Tesla Company, Inc.

Yours respectfully,

Francis M. Hugo

Secretary of State

[illegible], 1[illegible].

Dear Mr Anderson:

I certainly owe you an [illegible] for [illegible] discourtesy in not answering your inquiries about the [illegible]-Tesla correspondence. My excuse is that I suffered [illegible] bereavements, that completely prostrated me for a time, and made me doubt whether life would ever be [illegible] again. [illegible] away for awhile but had to return to settle [illegible] estate, but expect to go back to [illegible] to make my home.

I am having photostatic copies of the letters made for you, and you shall have them as soon as they are finished. Mr Tesla also wrote many letters to his friend [illegible] Viereck who was a writer and a poet. I bought some of these letters from Mr Viereck a number of years ago. Unfortunately, he was a Pro-German and was in serious trouble during the war. These (letters) I think you will find interesting.

Will also send you an enlarged photograph of a snapshot that my husband took of the " Tesla Tower" that was built at a place called [illegible] not far from my home. We went over one day just before the tower was demolished. It was a weird looking structure standing about 150 feet high, with walls of tremendous thickness. It had been abandoned [illegible]

some time. We went into a room that had been Mr Tesla's office and I picked up many cancelled checks and old bills that littered the floor. I also found some patterns made of wood with Tesla's name on them. It was a scene of utter desolation and frustrated hopes. We were deeply touched, and I have treasured what most of my friends have called trash, for many years, because they had belonged to a man whom I deeply revere.

How very strange life is - When I asked a very famous Autograph Dealer, about fifteen years ago, if he had an autograph of Nikola Tesla, he looked at me in a superior manner and said " Who in the world, and what is Tesla - I never heard of him." Almost the same thing happened when I went in 1946 to see Miss Mary Benjamin. She looked at me in surprise and said " Who on earth is Tesla, I never even heard of him. He simply could'nt amount to very much".

It was useless to try to make her understand that he was the greatest Genius of modern times, far greater than Marconi or Edison. She just would'nt believe it.

You can imagine my surprise when one day last Autumn she phoned me about the Johnson letters.

I am so happy to see this good, gentle souled, sensitive man being honored at last, as he deserves to be. Its sad that he is'nt here to receive these honors.

I feel Mr Anderson, that the letters that he wrote to his friends in this country should remain here. He spent the greater part of his life in America. He must have

~~He must hav~~e loved it, for even when he was a very rich man, he preferred living here to returning to the land of his birth.

Please accept my sincere thanks for the stamps. I think they are beautiful.

I hope to have the photostatic copies off to you by the end of this week, and I also hope you will make allowance for my [illegible] to you - please do.

Kindest Regards

Sincerely

[illegible]

Mrs James W. McChesney

Of course you are free to use these copies in any way you wish. I am glad for you to do so.

Catherine E. McChesney
68 Merrick Rd
Baldwin, N.Y.

January 24th 1953.

Mr Leland I. Anderson
127 Seymour Avenue S.E.
Minneapolis 14, Minn.

Dear Sir:

I regret to tell you that my Mother is not in Baldwin at present. Following my Father's death, she left here in Nov. for New Mexico, and expects now to make her home in the Southwestern part of the United States, preferably Arizona. Her rare books, autographs and collections of letters are in storage vaults at this time, and I do not have access to them. The Tesla letters and papers I presume are among them. I only know they are not here in this house.

You seem to be greatly interested in Tesla, so I wouldsuggest that you write Kenneth M. Swezey, 163 Milton Avenue, Brooklyn N.Y. I understand that he was one of Tesla's closest friends, or John J. O'Neill - 209 North Long Beach Avenue, Freeport, Long Island, N.Y.

Mr O'Neill wrote a Biography of Tesla, entitled"Prodigal Genius"

Hoping this will prove to be of some assistance to you - I am

Respectfully

Catherine Elizabeth McChesney


Mr Loland I. Anderson
127 Seymour Avenue
Minneapolis 14,

[illegible] Avenue S. E.
[illegible], Minn.
[illegible]

[illegible]
[illegible]
N[illegible]

[illegible]:

[illegible]
[illegible] articles
[illegible]s.

[illegible]
[illegible] (Publishers
[illegible]
[illegible]tion [illegible]
[illegible]

[illegible] information [illegible], I remain,

[illegible],

Leland I. Anderson

[illegible]

Dear Mr Anderson
This item is very scarce - If you wish we shall be [illegible] to search for a copy for you but it would take some time to find it. There is very little material in print on the "Old Gent" - say that with a fec[illegible]on - use to sell him when he resided at the [illegible]el New Yorker during the depression. Had a copy of his [illegible] which is also very scarce - don't believe it's been sold. If interested please let me know meanwhile hope to have the pleasure of serving you soon again.

Respectfully
A [illegible]

1[illegible] Church St NYC 7

July 25 1[illegible]

BOARD OF EDUCATION
CITY OF CHICAGO
228 NORTH LASALLE STREET
CHICAGO, ILLINOIS 60601
TELEPHONE 641-4141
JOSEPH P. HANNON
GENERAL SUPERINTENDENT OF SCHOOLS

JAMES G. MOFFAT
DEPUTY SUPERINTENDENT
MANAGEMENT SERVICES
TELEPHONE 641-4945

May 15, 1980

Dear Mr. Anderson:

This is in response to your letter of May 5, 1980, addressed to the General Superintendent of Schools, regarding the former Nikola Tesla Elementary School at 6657 South Kimbark Avenue.

The Board of Education of the City of Chicago approved the closing of the Tesla Elementary School on August 18, 1977, as a result of a tremendous decline in student membership.

The Woodlawn Organization, in its effort to rebuild the Woodlawn Area, is currently constructing new buildings under its redevelopment program. If this new development will provide a sufficient number of school-age children within the former Tesla attendance area, it may warrant reopening of the school.

Sincerely,

James G. Moffat

JGM:ap

Mr. Leland Anderson
2525 South Meade Street
Denver, Colorado 80219

cc: Dr. Angeline P. Caruso

NIKOLA TESLA
ELEMENTARY SCI
6657 South Kimb
Chicago 37, Illin

NIKOLA TESLA

Few men have contributed so much to man's technological progress and are as little known as Nikola Tesla. Born on July 10, 1856, in what is now Yugoslavia, Tesla came to America in 1884. The free dynam...

This success in ... Tesla's alternating current ... power development. The deci... Niagara Falls in the middl... ...se system during the same period prove... to coincidence. The system brought success... project and the project ... ola Tesla's polyph... system of alternat... ...h was subsequently adopted as the princi... ...wer transmission and ...

...tive genius also sparked a technological ex... ...munication and automation. His experi... ...h high frequency currents, transformers, ...a and ground circuits, in the 1890's, made ...levision, and other electronic instruments. ...r after his death, the United States Su... ...d Marconi's basic patents invalid on the ...rk of Nikola Tesla and John Stone.

...f Nikola Tesla's genius upon industry and ...ication and their consequent effects upon ...has received scant recognition. It is singu... an institution whose purpose is the im... ...velopment of the individual and society ...e are honored to work in a school dedi... ...sla.

PROGRAM

FOR THE DEDICATION OF

NIKOLA TESLA SCHOOL

TESLA LABORATORY

LONG ISLAND N Y

Nikola Tesla

MEMORABILIA

Volume II


Attractions


Attractions
What's the Big Attraction?
Nikola Tesla Monument


Special Thanks
Nikola Tesla Monument
Music performed by

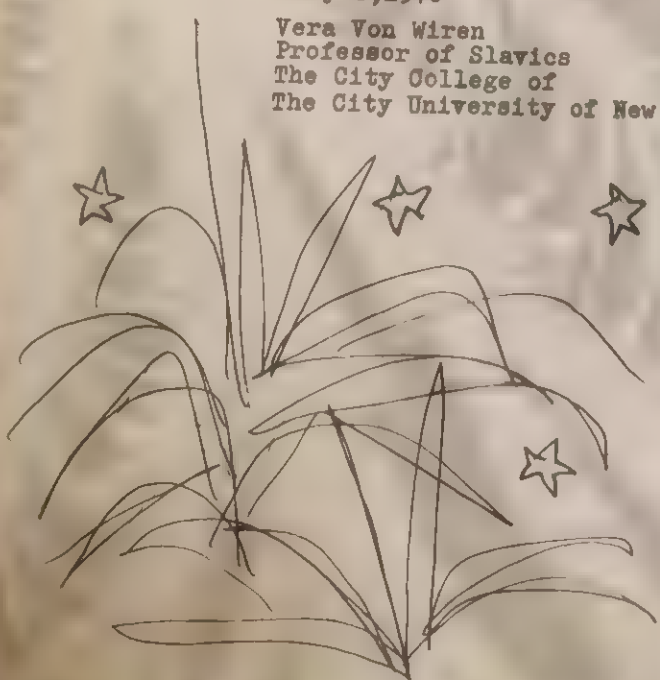
Nikola Tesla

THE GREAT AMERICAN SLAV

Mighty Perun, God of the ancient Slavs,
Powerful guardian of the secrets of Heaven!
For centuries you have sent thunder and
lightening bolts to the Earthlings
awaiting an answer from them -
until one day, one of your sons
born in the land of the Southern Slavs
blessed with an insight caught on to your message
answering you with the AC to DC you sent him.
Unselfish, devoted to science and art
a dreamer and poet at heart.....
Leaving the shores of the land he was born
he came to the country he then called his own
devoting to it his mind and his art.
America Beautiful! A Nation composed of all nations
is greatful to Nikola, a son of the Slavs -
In spirit of our founding fathers: Jefferson, Adams
you Nikola, left a great message behind:
THE GREATEST TREASURE ON EARTH IS WHAT ONE HAS
IN HIS MIND AND HIS HEART!.....

July 6,1976

Vera Von Wiren
Professor of Slavics
The City College of
The City University of New York



the Bicentennial

17 for 76


A
IN HONOR OF
NIKOLA TESLA
WEDNESDAY, 7 JULY 1976
BROOKHAVEN NATIONAL LABORATORY

Tesla in 188[illegible] at age of 32

Nikola Tesla was born in Smiljan, province of Lika, near the Dalmatian coast of Yugoslavia on July 10, 1856. He studied mathematics and physics at Graz Polytechnic Institute and philosophy at Prague University. He worked in electrical engineering in Budapest inventing a telephone repeater. After a few years in France and Germany he emigrated to the United States in 1884 and became a naturalized citizen. He started his career in the United States with Edison but soon went to Westinghouse Company where in 188[illegible] he developed the first ac induction motor which, coupled with improvements in power transmission such as transformer [illegible] revolutionized the newly emerging power industry. For a dec[illegible] he was a prolific inventor, going on to build his own laboratory in Colorado Springs and later yet another laboratory at Shoreham on Long Island, devoting much of his efforts to what turned out to be an unsuccessful attempt [illegible] power. His laboratory at Shoreham was started in 190[illegible] and closed for lack of support in 1906. He died in New York City on January 7, 1943, at the age of [illegible]

PROGRAM
BERKNER HALL

10:00 a.m. Symposium
The Man, The Work, The Future Technology

Chairmen
Dr. R.C. Anderson, Assistant Director
Brookhaven National Laboratory
The Honorable [illegible]
Consul General of Yugoslavia
New York City

Speakers
Frank [illegible], President
IEEE Power Engineering Society
Duke Power Company
Walter H. Bales, District Engineer
New York City
Westinghouse Electric Corporation
Gordon D. Friedlander, Senior Editor
IEEE *Spectrum*
Eric B. Forsyth, Head
Power Transmission [illegible]
Brookhaven [illegible]

[illegible]

[illegible]

[illegible]
Superconducting [illegible]
High Flux Beam [illegible]

Dear Mr. Leland Anderson. [illegible]

I received your letter [illegible] returned from Florida where [illegible] the winter months, for [illegible]

My name was [illegible] a [illegible] very good friend [illegible] worker in this field. [illegible] to know my associat[illegible] did for Mr Tesla [illegible] [illegible] to say whe[illegible] Mr. Tesla. from [illegible] the time he first [illegible] time before he [illegible] tell you Mr. Tesla [illegible] kind and considerate human [illegible] who loved Pigeons, [illegible] only to feed the pigeons [illegible] and [illegible], at the [illegible] library at 41-42 Street [illegible] at [illegible] o'clock each day and then walk around the [illegible]

(2)

of the building where young or injured birds found shelter on the window sills or behind the large statues where they were safe from stray cats or dogs. When I would find any such birds, I then would take them to the Governor Clinton Hotel and later to the Hotel New Yorker where Mr Tesla lived, and he would nurse the sick and injured, and young birds back to health, and I would release them at the library for him. In his room he had many fine cages to house the pigeons, which was made by a fine carpenter, as Mr Tesla was in all his doings it had to be done right.

I spent many hours with him when I would deliver the

[illegible] [illegible], [illegible] [illegible]
about the pigeons [illegible]
at the time I was a young
Pigeon Fancier who [illegible]
pigeons from 100 [illegible] [illegible]
Stuckey and with Mr. Tesla [illegible]
on health of birds I was very
lucky to win many many of
pigeon Racess, [illegible]

In one meeting with him
he told me that [illegible]
Edison could not [illegible]
and he told me he had a
law suit against him [illegible]
a large amount of money [illegible]
happened I dont know [illegible]
suit.

I do know when he [illegible]
pass away he had very little
money, as I left [illegible]
and feed cost run unpaid
for for a long time [illegible]

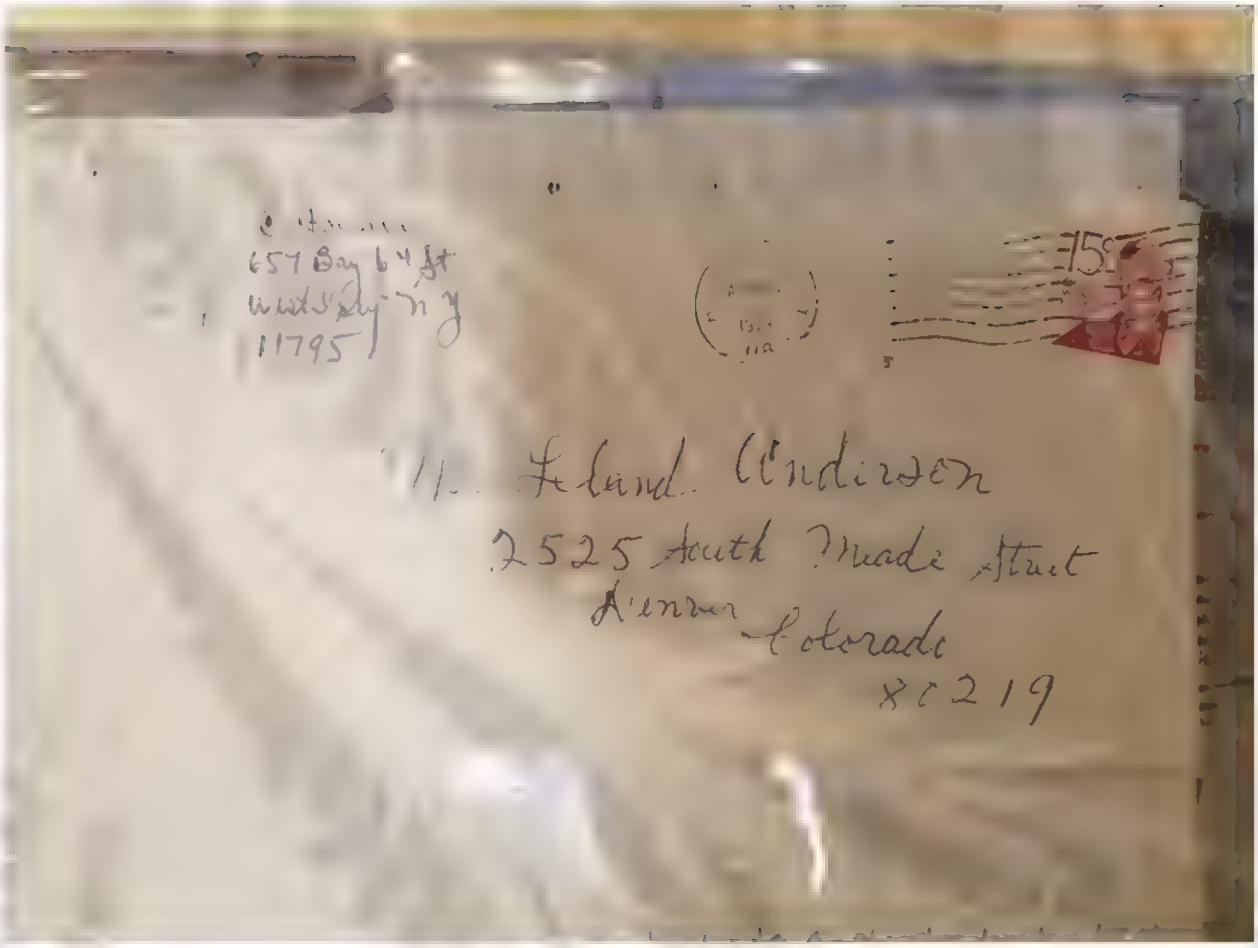
There is one thing that stands
out in one of these visits. He had
a large box or container in
his room near the pigeon
cages and he told me
be very careful not to disturb
the box as it contained
something that would destroy
an airplane in the sky
and he had been [illegible]
presenting it to [illegible]
I was only a young
man at the time, and [illegible]
wonder why I did not go to
the government and tell them
about this invention instead of
it most likely was destroyed
or in the room or in the
cellar of the Hotel after his
death.

I did not visit any of his
labs or places of his work [illegible]

i did not know Thomas [illegible]
or meet him, nor do I have
any papers or photos, my only
job I was with the homing
and feeding of the pigeons.

I am so very sorry
i could not be of any help
other than what I have written
here to you. Some where in my
old pigeon papers and records I may
be able to find a letter of
recommendation for a job at
the General Electric Co. which Mr. [illegible]
was kind enough to present to
the Co., I did not have the
opportunity to get the job, and I
went on to find work
else where I was contented and
happy. Sorry i could not help further.

I remain
Charles [illegible]



657 Bay 64 St
11795
Leland Anderson
2525 South Meade Street
Colorado

Dear Mr Anderson

I received your letter and was pleased that any information I was able to give to you could be of some small help to you.

You asked if I ever met the man Edwin [illegible]. I can't ~~[illegible]~~ recall his name or ever meeting him as I only took care of the pigeons for Mr [illegible]. I looked up the Telephone books and found the [illegible] phone and address, which I am enclosing.

I have not found the letter of recommendation, but I am sure its somewhere in my home and if and when I can find it I will send you

a [illegible] [illegible] did not
[illegible]

When I think back of
Mr. [illegible] great mind, I
wonder why he did not
have lawyers to take care
of his many inventions that
he lost control of and
on his passing away to be
so rich in [illegible] and
inventions, yet he [illegible]
away without [illegible]
myself was [illegible]
[illegible] many hundred [illegible]
hundreds of dollars that
was for the [illegible]
and of my salary [illegible]
the birds [illegible]
I too loved the birds [illegible]
always kept some [illegible]
felt the Lord would [illegible]
down on me with his blessing
for the work and kindness of

helped make Mr. Tesla a little
happy.
I Here is the mans name
you were asking about
I hope it will help some
way somehow to show the
world, Mr Tesla I am sure
was a far greater man the
Thomas Edison, only Edison
spent fortunes to keep his
name in the public eyes
but I guess thats ~~life~~ life

Sincerely
Charles [illegible]

MR Edwin J. Binney
737 Arlington Road,
West Babylon
Long Island
New York
11704

Phone is
516-669-3663

The Veteran Wireless Operators Assoc regretfully sends a final message of farewell to that veteran of all wireless, Nikola Tesla. Although ~~xxx~~ he did not attain the practical demonstration of his ideas, in the realm of wireless communication, yet he had a clear understanding of the subject and of the broad way in which it could be made use of.

As early as February, 1893, he described a wireless transmitter, in general ~~xxxxxx~~ but neverthàless correct terms, and ~~xxxxxx~~ further stated that " a properly adjusted self induction and capacity device could be set in action by resonance at any point within a certain radius of the source". This, he stated, would lead to"transmitting intelligence, or perhaps power, to any distence through the earth".

Here was wireless telegraphy clearly envisioned, and with it tuning, ~~xxxxxxxxxxxxxxxxxxxxxxxx~~ the first great essential in the art. Thus it was that it is but fitting to place Nikola Tesla's name and his memory in the forefront of those pioneers who f oreaw many years ago the principles of the art in which we, in a later time, were likewise pioneers .

(G H Clark, 1943)

New York, N. Y.
January [illegible], 1943

IN MEMORY OF NIKOLA TESLA.

The [illegible] Wireless Operators [illegible] records with regret- [illegible] [illegible] Veterans, [illegible]. Although he did not [illegible] of his ideas, [illegible] of [illegible] communication, yet he had a [illegible] of the subject and of the broad way in [illegible] it would be brought to use.

[illegible] 1893, he described a wireless [illegible] current [illegible], and further stated that "a properly adjusted [illegible] the capacity device could be set in action by [illegible] at any point within a certain radius of the source". This, he said, would lead to "transmitting intelligence, or perhaps power, to any distances through the earth".

Here was wireless telegraphy clearly envisioned, and [illegible] its tuning, the first great essential in the art. [illegible] it is but fitting to place Nikola Tesla's name and his memory in the forefront of the list of those pioneers who foresaw many years ago the inherent principles of the art in which we, at a later time, were likewise pioneers.

William J. McGonigle,
President,
Veteran Wireless Operators Association

Prepared by G H Clark for
VWOA

SRM-4 1050

[illegible] 9, 196[illegible]

[illegible]

[illegible]:

Your le[illegible]er of the 5th was certainly a surprise. Your questions [illegible] territory than can be properly answered by a letter. However I can try.

Yes, I worked for Tesla in the summer of 1900, when I was 15 years [illegible]. At that stage I was greatly interested in electricity and intended to become an electrical engineer. His laboratory was out on Knob Hill, perhaps about a mile from the State School for the Deaf and Blind. At that time [illegible] it was all uninhabited open prairie. [illegible] car line [illegible] out to the Catholic Hospital and [illegible] Tesla got current from the electricity of the tro[illegible] member, though there may have been a separate [illegible] direction. When I heard about Tesla's laborator[illegible] wished I could get a job. ^there^ Father kne[illegible] the local electric power company, and [illegible] he would give me a job. To my vast exci[illegible] probably more as an accomodation to Mr. [illegible] need for a boy.

Tesla had an Austrian assistant [illegible] name [illegible]. He was an engineer, kin[illegible] time I worked under his direction. M[illegible] wind up wire that had been used in [illegible] move things around as told, help Mr. [illegible] in [illegible]

The laboratory was a big structure of wood, [illegible] 50' as I remember it. The center of the roof [illegible] could be opened to the sky. The technic[illegible] transformer; wound on a sort of [illegible] circular fence about 8 feet high and [illegible] feet [illegible] primary circuit consisted of two heavy insu[illegible] connected "in parallel" (do you know anything about e[illegible]ical principles of transformers?). The "secondary" circuit [illegible] insulated copper wire of the size and kind that are used for ordinary outdoor electric power lines, wound also on the "fence" above the [illegible]. In the center were two metal balls about [illegible] feet in diameter mounted on supports that could be moved around and placed at different distances from each other. One ball was wired to one end of the secondary circuit; the other ball to the other end of that circuit. There was an ordinary electric power transformer outside the lab. The current came in at 500 volts: was "stepped up" to about 10,000 volts, as I remember; and then run through a set of "condensers" and [illegible] make and break interrupter via the condenser and into the primary [illegible] circuit. [illegible] secondary circuit to [illegible] primary [illegible] to four [illegible] volts or more. [illegible] controlled [illegible] switches.

at the foot of the "fence"

Al[illegible] mornin[illegible] of the [illegible] begin. [illegible] between the balls up hi[illegible].

Otter [illegible] or [illegible]
[illegible]
[illegible] V. [illegible] or [illegible]
Tesla coil. [illegible], [illegible] was an article about these ex-
periments in Harp[illegible] I remember it by Tesla him-
self that appear[illegible]. It was illustarted with pictures
of the [illegible]. [illegible] that article as the basis of a ~~r~~
report [illegible] in "wireless telegraphy" in my junior
year at Harvard College [illegible].

The [illegible] answers two of your questions. I do not know what be-
came of his apparatus. [illegible] likely he shipped the condensers back to
his lab on New York City. The rest was just coils of wire that probably
were sold back to the power company or a junk dealer. In those days
I do not know of any empty place in the College buildings that would
have held the big oscilator or Tesla coil. Oh no, I was only a little
boy and would not have had enough self confidence to ask his permission
to write to him.

He was tall and thin and nerv[illegible]. I began working for
him on a Monday. Saturday noon [illegible] office and asked
me how much I thought ~~x~~ I was worth. I [illegible] tongue-tied
with embarrassment. After [illegible] ~~xx~~ [illegible] and my confusion
he asked me if I thought [illegible] right. This was
the first time I had ever worked for any[illegible] dollars seemed
princely, and anything to get rid of [illegible].
I was overwhelmed when he gave me eight dollars. Oh, boy! I was
very immature and inarticulate and probably I seemed pretty stupid to
him.

By an odd chance in [illegible] from my older sister
several old letters [illegible] of old family corres-
pondence. Among them was [illegible] my mother to my oldest
sister who had been married the [illegible] one to Boston to
live. In this letter from my mother she mentions my working for Tes-
la and a little about him and how he impressed [illegible].
enclose it herewith. I do not want it back. [illegible] it will give you
a bit of flavor if nothing else.

I presume you know of that excellent biography of Tesla that was
written for the G.I. paper backs during the war II? I once had a copy
of it in my cabin in Vermont but whether it is there now or not, I do
not know. It was vividly written and agreed with my memories and
impressions of him very well. The author was a journalist whose name
I have forgotten.

I am sure you are having an interesting time writing this biography.
My best wishes to you on it. And when you see [illegible] Jackson
again, please give them my love.

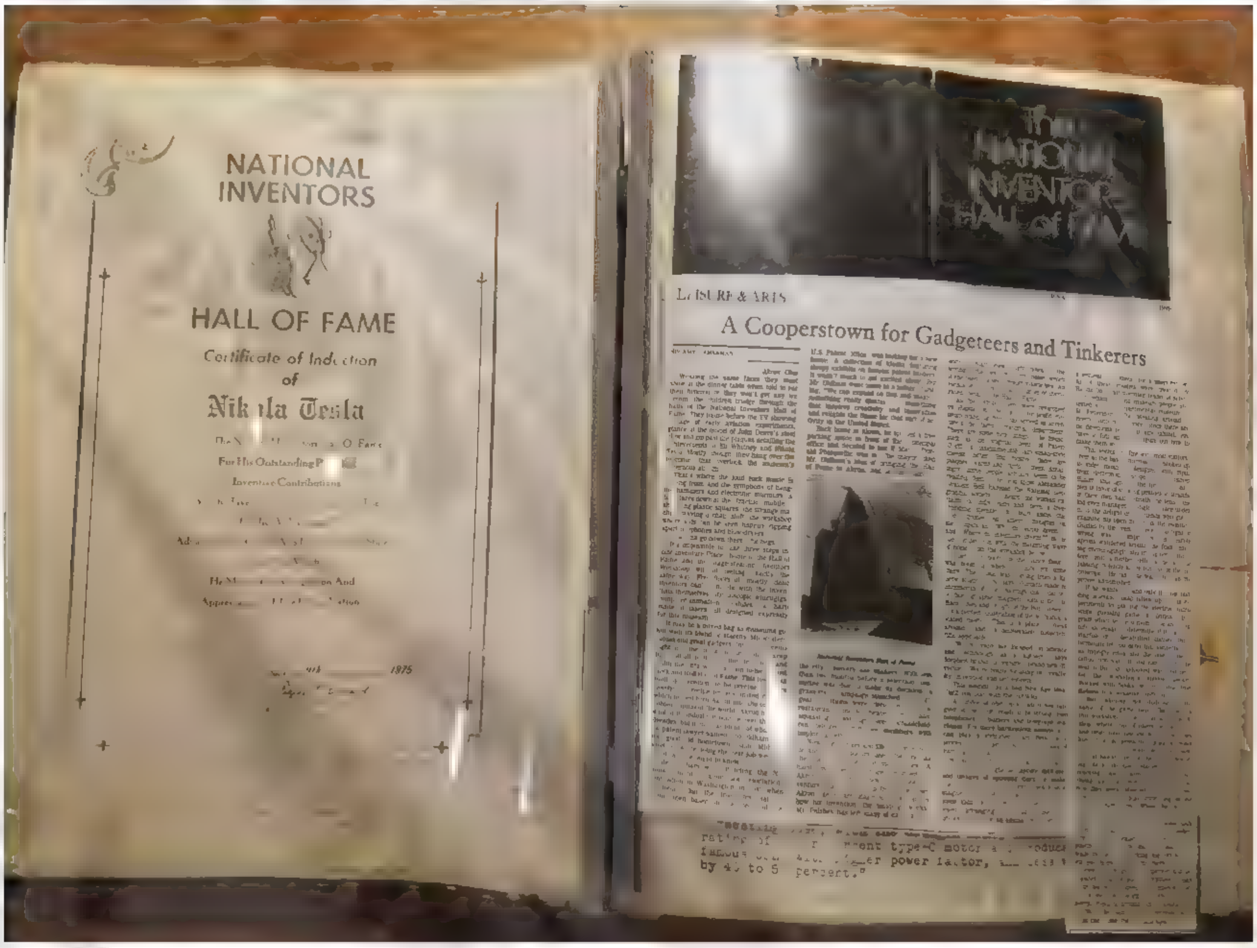
Yours sincerely, Richard B. Gregg

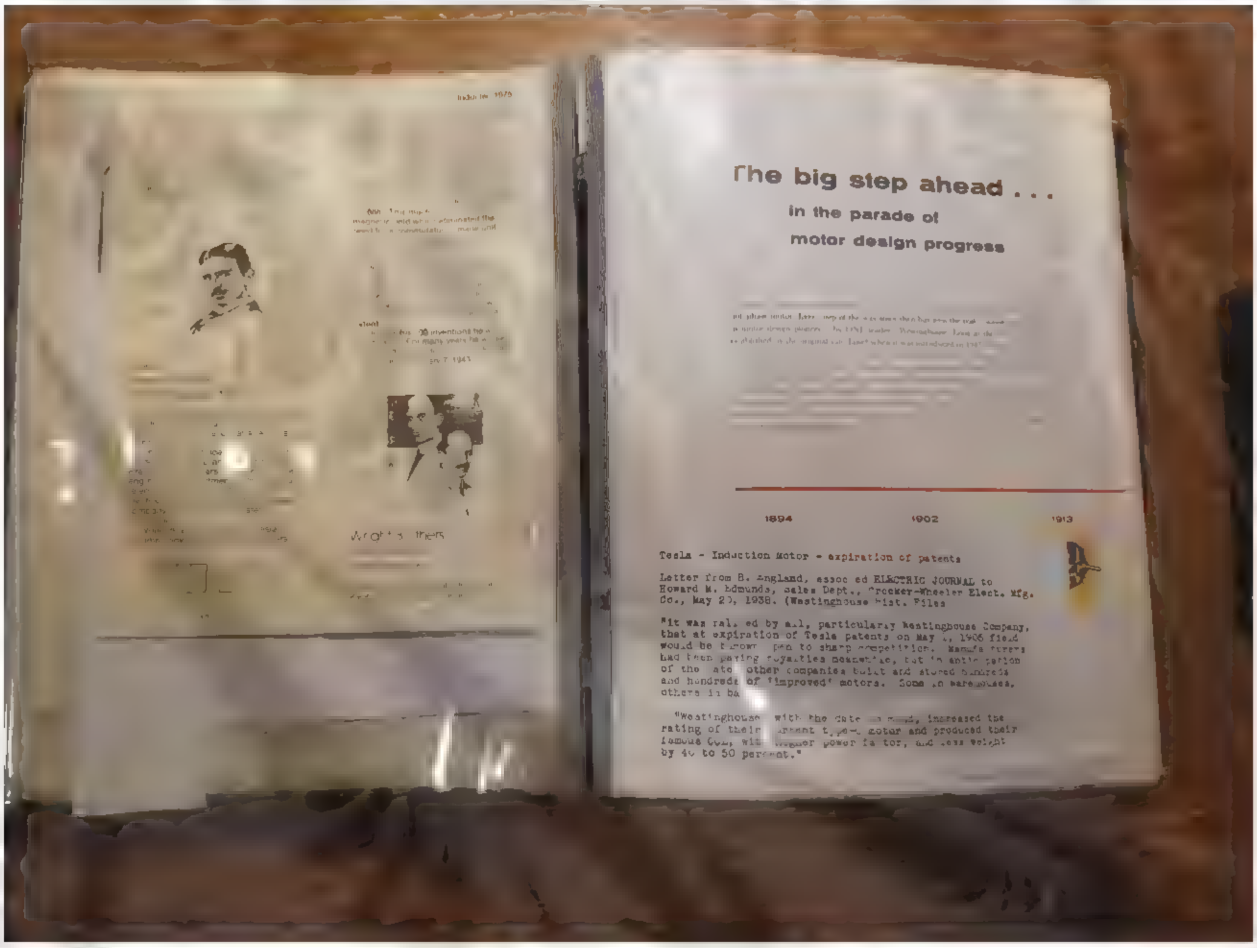
Richard B. Gregg

P.S. The experiments were for [illegible]
[illegible]
[illegible]
[illegible] coil.

Richard gets up early and goes out to Tesla's laboratory [illegible] the hill [illegible] the Printer's Home, at [illegible] morning — & comes home at one for dinner & then not till nearly seven o'clk in the evening. He got pretty tired and [illegible] the last four or five days — and I [illegible] whether it wasn't going to be too hard [illegible] little fellow. — [illegible] was [illegible] being called a little [illegible] made some mistake — [illegible] [illegible] Tesla [illegible] fair out & that pleases both [illegible] & when he got his wages Sat. night he came home & with such a [illegible] brown eyes made us guess all round how much Mr. Tesla had given him and then announced the magnificent sum of eight [illegible] He gives us [illegible] had left it with [illegible] but he [illegible] him [illegible] & with something — He [illegible] me that he thought he wouldn't buy [illegible] money into a second hand wheel as he at first [illegible] — but would save it for electrical books

isn't he like Papa? [illegible] in the [illegible]
quite so satisfactory as [illegible] after all –
Don will have to take off his hat to Richard
as earning more than he can – just now.
I get up at six o'clk every morning to [illegible]
to his breakfast & so does [illegible] – and
we let Alan & Elinor get all [illegible]
want. Elinor starts [illegible]
next Tuesday & College [illegible]
There are so many [illegible]
that they don't know [illegible]
I have had the thought of [illegible]
into our house if the college [illegible]
iron beds & bedding just for a month [illegible]
until they could make some permanent
arrangement for them – but I hate the [illegible]
and confusion of strangers in the house [illegible]
those girls are such raw – chatterboxes – [illegible]
hates the idea – what do you think of it?
How I do wish Papa's future place was [illegible]
Then we could make definite plans – I know it
is hard for you & Farwell and I am very sorry [illegible]
to ask it of you dear – I hope the time [illegible]
will not be much longer – and you are not the [illegible]


NATIONAL INVENTORS
HALL OF FAME
Certificate of Induction
of
Nikola Tesla
1975
The NATIONAL INVENTORS HALL of FAME
LEISURE & ARTS
A Cooperstown for Gadgeteers and Tinkerers


The big step ahead . . .
in the parade of
motor design progress
1894
1902
1913
Tesla - Induction Motor - expiration of patents
Letter from B. England, assoc ed ELECTRIC JOURNAL to Howard M. Edmunds, Sales Dept., Crocker-Wheeler Elect. Mfg. Co., May 2?, 1938. (Westinghouse Hist. Files
"It was real ed by all, particularly Westinghouse Company, that at expiration of Tesla patents on May ?, 1906 field would be thrown open to sharp competition.
"Westinghouse with the date in mind, increased the rating of their present type motor and produced their famous CCL, with higher power factor, and less weight by 40 to 50 percent."

Tesla - Induction Motor - expiration of patents

Letter from B. England, assoc ed ELECTRIC JOURNAL to Howard M. Edmunds, Sales Dept., Crocker-Wheeler Elect. Mfg. Co., May 20, 1938. (Westinghouse Hist. Files)

"it was ralized by all, particularly Westinghouse Company, that at expiration of Tesla patents on May 1, 1905 field would be thrown open to sharp competition. Manufacturers had been paying royalties meanwhile, but in anticipation of the date, other companies built and stored hundreds and hundreds of 'improved' motors. Some in warehouses, others in barns.

"Westinghouse, with the date in mind, increased the rating of their current type-C motor and produced their famous CCL, with higher power factor, and less weight by 40 to 50 percent."

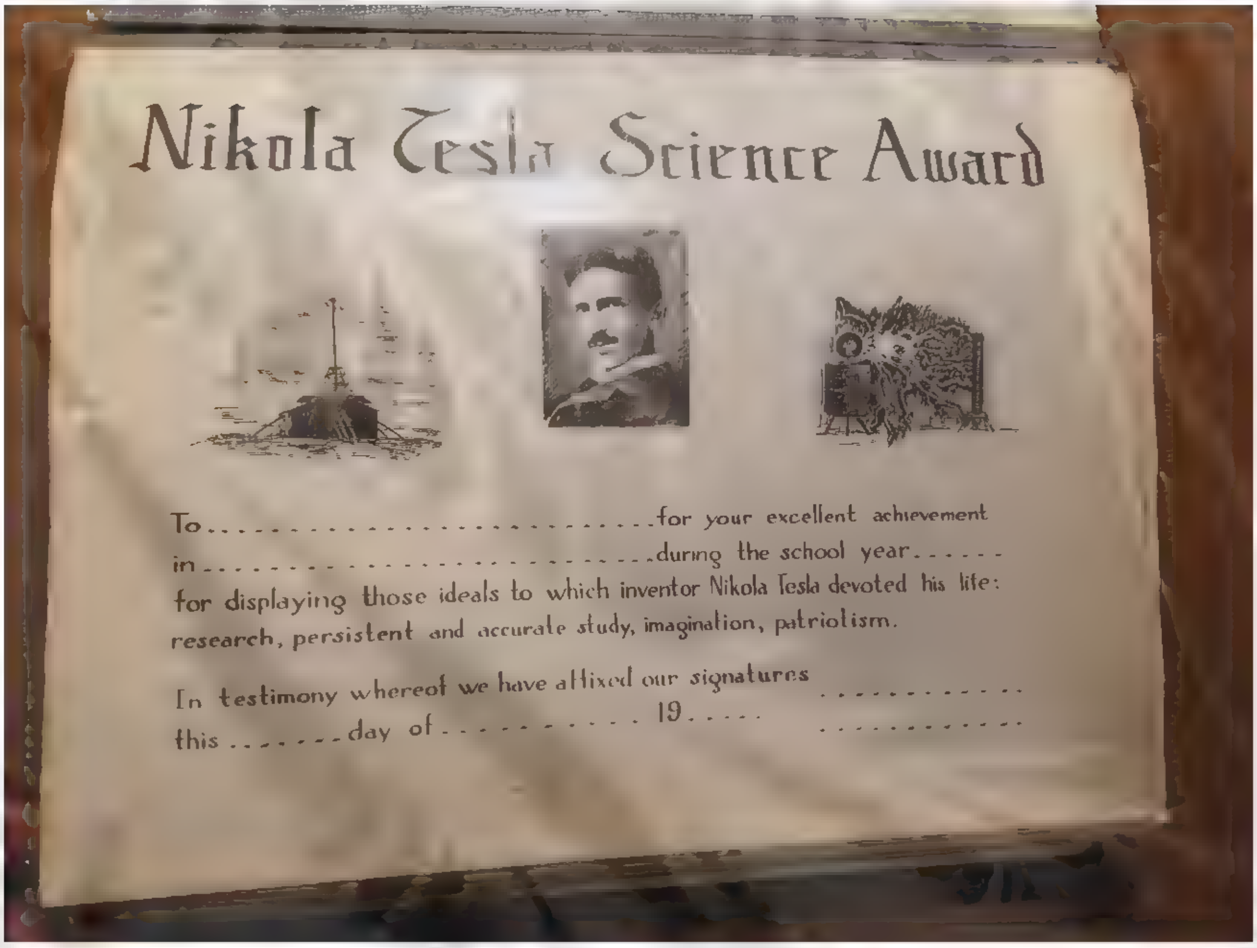
Give Awards To Students

[illegible]

Glens Falls [illegible]

N.Y., SATURDAY, JUNE 1, 1963

SCIENCE WINNERS — Rob[illegible] and [illegible] Science Award [illegible] nominated as the [illegible] in the eighth [illegible] excelled in science [illegible]



Nikola Tesla Science Award

To . . . . for your excellent achievement
in . . . . during the school year . . . . . .
for displaying those ideals to which inventor Nikola Tesla devoted his life:
research, persistent and accurate study, imagination, patriotism.

In testimony whereof we have affixed our signatures . . . .
this . . . . day of . . . . 19 . . . .

AN EVENING WITH NIKOLA TESLA, by Elmer Gertz

(An account of a meeting with the great inventor by Atty. Gertz in May, 1935, at the George Sylvester Viereck house-cooling party given upon the occasion of their vacating to live in smaller quarters. Many noted people were present during the evenin and all remained until the morning had almost arrived. Editors, scientists, artists and professional men ate, drank and talked together and Mr. Gerts has inscribed his fond recollection of one of the greatest men at the gathering, his friend Nikola Tesla.)

Unknown to the guests, a venerable gentleman of universal fame had telephoned Mr. Viereck and suggested that the two of them visit the corner cinema palace. Viereck protested that he could not leave his guests, explaining the farewell party and letting Mr. Tesla in on a secret. He, Tesla, was to come to the party as a surprise guest; and particularly as a surprise to his wife Gretchen. Tesla agreed to break an old habit of reticence and to join Viereck at his table, becoming his house guest for the first time.

So there appeared the vision of a man from a strange, new world. A tall, thin man, whose eyes blazed with an unearthly light, entered the room so quietly that one was hardly aware of his presence. He bowed himself to the seat of honor, to his right Gretchen, to his left Sylvester. He beamed upon them, greeting the guests with a kindly nod.

Before he could be introduced, W. Orton Tewson, friend of poets, blurted: "Nikola Tesla!" Tewson's eyes flushed with emotion. More than thirty years previously <u>The Times</u> had sent him to interview Tesla, who was then in a controversy with Thomas Edison. He was now once again to talk to the man he knew as a genius, and was given a seat near him.

Atmosphere at the gathering pleased the poet-scientist who is chiefly responsible for many marvels of our modern technology. Tesla, who in the opinion of many experts has single-handedly established the science of applied electrical mechanics with his invention of the rotating magnetic field and systems of arc lighting and alternating powere transmission, was in a rare mood of communication. He ~~did~~ told his life story unostentatiously and with simple eloquence. He told of his platonic affairs with women; he told of his inventions that have made the whole of mankind his debtor; of his plans, his credo, his [illegible].

Tesla and Leon Dabo, youthful man of the world, lecturer and linguist and supremely confident, took the center of the stage, so to speak, Drabe by virtue of an indomitable ego and Tesla by grace of achievement. Drabe spoke insistingly, commandingly, brilliantly. Tesla discoursed quietly,

(more)

sweetly, like a good shepherd to his flock. Tesla the scientist, the lover of all things beautiful, spoke of the verities of science that will exist when all transitory art is no more:

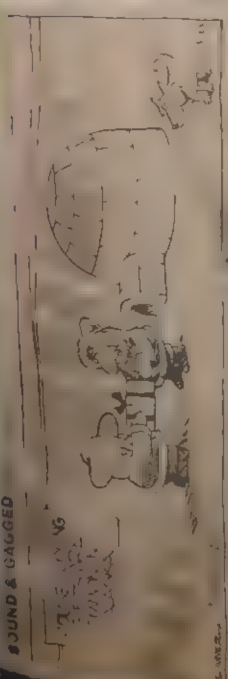
"A scientific principle is for all time, immutable, the law of the universe. ut a work of art, however beautiful, must in time perish." He addressed George Delacorte Jr., a publishing tycoon who had earlier rhapsodized over double plumbing and proclaimed a bathtub superior to a poem:

"You, young man, have a touch of genius in you. Your words, by some devious path, lead to the truth about which I have spoken."

Dabo would have none of Tesla's confidence in science and its eternal truths. He proclaimed the imperishability of art and said a divinity watches over beautiful things so that they are immortal. Basic issues were the theme of both men, and as they debated other guests sat as if bewitched in silence.

As Viereck rode with Tesla home, which was atop a massive Manhattan hotel, Tesla recited his friend's own favorite poem, in English and German. This was his was of paying tribute to his host of the evening.

§ § §



A scientific princi[illegible] is for all time, immutable, the law of the
[illegible]niverse. [illegible] a work of art, however beautiful [illegible]

CUTTING, John Clifton, newspaper man See Vol. 14 (1926-27).

CUTTING, R(obert) Fulton, financier; b. N.Y. City, June 1852; s. Fulton and Justine (B[illegible]ard) C.; A.B., Columbia, 1871, A.M., 1875, LL.D., 1904; m. Nathalie C. P. Schenck, of Brooklyn (died 1875); 1 son, R. Bayard; m. 2d, Helen Suydam, of New York, Jan. 1883; children—Helen Suydam, Elisabeth McEvers, Fulton, Charles Suydam, Ruth Hunter. Has been officer or dir. in numerous corpns. Home: 14 E. 89th St., New York, N.Y.*

CUTTING, Starr Willard, univ. prof.; b. W. Brattleboro, Vt., Oct. 14, 1858; s. Henry Maynard and Cornelia Liscom (Starr) C.; A.B., Williams Coll., 1881, A.M., 1892; studied univs. of Leipzig and Geneva, 1886-88; grad. student, 1890-91, Ph.D., 1892, Johns Hopkins; m. Mary Edith Derby, of Springfield, Mass., Sept. 11, 1887; children—Winifred, Edith, Clifton. Prin. Deerfield (Mass.) Acad., 1881-86; prof. modern langs., U. of S.D., 1888-90, prof. German and French, Earlham Coll., Ind., 1891-92; asst. prof. German, 1892-94, asso. prof., 1894-1900, prof. German lit., 1900-06, pro[illegible] dept. Germanic languages [illegible] U. of Chicago, and [illegible] 1923. Mem. [illegible] Author: [illegible] Hartmann von Aue, 1894; [illegible] of Lessing's Minna von Barnhelm, 1899; The Modern German Relatives Das and Was, 1904; [illegible] John Burschenschaft [illegible] American [illegible] 1911; [illegible] many, 1913. An American Estimate of the Salient Features of Modern German Life, 1914; Über die Schriften des Tenair Burschenschafters und Amerikanischen Arztes Robert Wesselhöft, 1917; Heinrich von Treitschke's Treatment of Turner and Burschenschaft [illegible] in his Deutsche Geschichte im Neunzehnten Jahrhundert, 1922. Also articles on langs and lit in jours and revs. Home: W. Brattleboro, Vt.

CZARNOMSKA, Marie Elizabeth Josephine, [illegible]; b. N.Y. City; d. Isydor and [illegible] (Conkley) C.; grad. Packer Collegiate Inst., Brooklyn, later studies under tutors. A.M., Smith Coll., 1904. Prin. girls' dept., Classical Inst., Schenectady, N.Y., 1875-77; teacher St. Mary's Sch., Raleigh, N.C., 1877-80, Packer Collegiate Inst., 1880-81, prin. St. Mary's Sch., Raleigh, 1881-88; prof. English lit., Smith Coll., 1888-1894; dean of women and lecturer on Eng. and Bibl. lit., U. of Cincinnati, 1904-09; student of Semitics 1916-18 and instr. O.T. lit., 1918-21, Columbia U. Lit.; prof. comparative lit., Sweet Briar (Va.) College since 1919. Lecturer on art, archæology, Bible, lit. and history. Mem. Am. Assn. Univ. Women, Soc. Bibl. Lit. and Exegesis, Am. Oriental Soc.; hon. sec. Egypt Exploration Soc. Author: The Authentic Literature of Israel (2 vols.), 1924, 1928. Home: Sweet Briar, Va.

CZERWONKY, Richard Rudolph, violin virtuoso; b. Birnbaum, Province Posen, Germany, May 23, 1886; s. Gustav and Marie (Garthoff) C.; studied with Florian Zajic, Andreas Moser and Joseph Joachim, in Berlin, at Klindworth-Scharwenka Conservatory, 3 yrs., Royal High Sch. of Music, 4 yrs.; m. Hildegard Maurer, of Boston, Mass., June 28, 1910. Début, Berlin, with Philharmonic Orch., 1906; played in Germany, Sweden, Holland, France, Russia, etc.; second concertmaster, Boston Symph. Orchestra, 1907-08, concertm., asst. condr. and soloist Minneapolis Symph. Orchestra, 1909-18; head of violin dept. Bush Conservatory of Music, Chicago, Ill., since 1918. Founder and dir. Bush Conservatory Symphony Orchestra, founder Woman's Symphony Orchestra of Chicago; conductor Chicago Philharmonic Orchestra. Has appeared as soloist with great acceptance, in leading musical centers of U.S. Became naturalized citizen of U.S., 1915. Lutheran. Mason (32°). Composer of string quartettes, piano trio, piano quintette, oboe sonata, and numerous violin pieces; has also written songs, and for piano and orchestra, and works for symphony orchestra. Home: 800 Michigan Av., Evanston, Ill. Studio: Bush Conservatory, 839 N. Dearborn St., Chicago, Ill.

D

DAANE, Gilbert Leonard, banker; b. Grand [illegible], Mich., May 10, 1881; s. [illegible] Mary Wa[illegible]; prep. edn. [illegible] and [illegible] Grand Rapids; student Mich. State Coll., E. Lansing, 1904; m. Mamie [illegible] of Grand Rapids, June 15, 190[illegible]; children—Gilbert Warren, Mary Elizabeth, James Dewey. Teller, Commercial Savings Bank, Grand Rapids, 1905-10; cashier, Mich. Exchange Pvt. Bank, 1910-17; [illegible] cashier, Grand Rapids Savings Bank, 1917-23, pres. [illegible] 1923; chmn. bd. Wolverine Bumper & Specialty Co.; mem. firm Daane & Westrate, ins.; pres. Century Fuel Co., Cascade Realty Co.; v.p. Breen & Halladay Fuel Co.; dir. Spencer Duffy Co., Galewood-Wyoming State Bank, E. Grand Rapids State Bank, Cody Trust Co. (Chicago), Fidelity Trust Co. (Detroit). Chmn. Liberty Loan campaign, World War. Chmn. city finance com.; chmn. Welfare Union Drive, 1927, 100th Grand Rapids Furniture Market, 1927. Treas. Y.M.C.A., Grand Rapids, and City Mission. Mem. Hesperian Soc. of Mich. State Coll. Republican. Mem. Christian Ref. Ch. Clubs: Peninsular and Cascade Hills Country (Grand Rapids), Detroit, Union League (Chicago), Blythefield Country. Home: 215 Norwood Av. S.E. Office: Grand Rapids Savings Bank, Grand Rapids, Mich.

DABNEY, Charles William, univ. pres.; b. Hampden-Sidney, Va., June 19, 1855; s. Robert L. D. (Stonewall Jackson's chief of staff) and Lavinia (Morrison) D.; A.B., Hampden-Sidney Coll., 1873; U. of Va., 1874-77, Ph.D., Gottingen, 1880; LL.D., Davidson, 1887, Yale, 1901, Johns Hopkins, 1902; m. Mary Brent, of Paris, Ky., Aug. 24, 1881. Prof. chemistry, Emory and Henry Coll., 1877-78, studied [illegible] and Gottingen, 1878-80; prof. chemistry, U. of [illegible] 1880-81; dir. N.C. Agrl. Expt. Sta., 1880-87, [illegible] and dir. Tenn. Expt. Sta., 1887-90; pres. U. of Tenn., 1887-1901; pres. U. of Cincinnati, 1904-20, retired 1920. Chemist and geologist State chemist of N.C., 1880-87, asst. sec. Dept. of Agr., 1894-97; first to [illegible] the phosphate deposits in Eastern, and tin ore in Western, N.C.; took prominent part in establishing an industrial sch. at Raleigh (now N.C. Coll. of Agr. and Mechanic Arts); pres. Summer Sch. of the South, 1902-04, Southern Edn. Bd., 1901. Chief dept. of govt. and states exhibits, New Orleans Expn., 1884-85; [illegible] mgrs. of government exhibits, Atlanta Expn., 1895, Tenn. Centennial Expn., 1897; mem. Jury Awards, Paris Expn., 1900. Fellow A.A.A.S., mem. N.E.A., Washington Acad. Sciences, etc. Clubs: Cosmos (Washington), Authors (London). Author: Reports of N.C. Agricultural Experiment Station, 1880-87; Reports of University of Tenn. Station, 1887-90; Old College and New, 1894; A National Department of Science, 1897; A National University, 1897; Washington's Interest in Education, 1900; History of Agricultural Education, 1900; Man in the [illegible] ra[illegible], 1904; The Meaning of the Solid South, 1909; Washington—Educationist, 1911; The South Re[illegible]nationalized by Education, 1911; Fighting for a New World, 1919. Address: 4 Warren Av., Bronxville, N.Y.

DABNEY, Edwin, lawyer; b. Comanche Co., Tex., Feb. 3, 1876; s. Edwin Thomas and Nannie (Dickenson) D.; grad. high sch., Blanket, Tex., 1896; LL.B., U. of Tex., 1903; m. Emma Adams, of De Leon, Tex., June 20, 1904 (now dec.); 1 dau., Amber Jane; m. 2d, Jewel Cooper, of Oklahoma City, Okla., Feb. 14, 1929. Admitted to Tex. bar, 1903, and began practice at De Leon; county judge Comanche Co., 1906-08; moved to Altus, Okla., 1910, and practiced there until 1919; mem. Okla. Ho. of Rep., 1919-23; asst. to atty. gen. of Okla., 1923-27, later atty. gen.; now mem. firm Dabney & Thompson. Democrat. Mason (32°, Shriner). Home: 2525 W. 21st St. Office: 625 Perrine Bldg., Oklahoma City, Okla.

DABNEY, Marye Yeamans, M.D., surgeon, editor; b. Tel[illegible], Miss., Sept. 20, 1881; s. John Davis (M.D.) and Virginia Amelia (Grant) D.; student U. of the South, Sewanee, Tenn., 1902-05, U. of Va., 1905-06; Ph.B., U. of Chicago, 1908, M.D., Johns Hopkins, 1912; m. Eugenia Blount, of Birmingham, Ala., Nov. 11, 1919; children—Sarah Cooper, Eugenia Blount, [illegible], Virginia Amelia Grant and Marye Yeamans (dec.). [illegible] R.I. Hosp. [illegible] 19[illegible] Bellevue Hosp., N.Y. City, 1913 [illegible] ogy and 1st asst. gynecologist, [illegible] Hosp., Cleveland, O., 1913-14; resident Howard A. Kelly Hosp., Baltimore, 1914-15; asso. in [illegible] Hillman Hosp., [illegible], Ala., since 19[illegible]; editor Southern Med. Jour., 1915-21, [illegible] 1921. Mem. [illegible] bd. [illegible] World War. Mem. A.M.A., Southern Med. Assn., Med. Assn. State of Ala., Jefferson Co. Med. [illegible] Birmingham Surg. Soc., Alpha Tau Omega, Sigma Nu. Democrat. Mason (Shriner). Kiwanis. Home: 3206 Cliff Rd. Office: Empire Bldg., Birmingham, Ala.

DABNEY, Richard Heath, univ. prof.; b. Memphis, Tenn., Mar. 29, 1860; s. Virginius (author of Don Miff and [illegible]) [illegible] M.A., U. of Va., 1881; student [illegible] of Munich, Berlin and Heidelberg, 1885-85; Ph.D., Heidelberg, 1885; m. Mary A. Bentley, of [illegible], Va., June [illegible] 1888 (died Mar. 18, 1889); 1 dau., Mary Bentley; m. 2d, Lily H. Davis, of Albemarle Co., Va., Nov. [illegible], 1899; children—[illegible] [illegible] [illegible] New York [illegible] 1881-82; [illegible] Ind. U., 1886-89; [illegible] 1889-[illegible] asso. prof. history, [illegible] ies, 1897-1906, prof. history, since 1897; dean of grad. studies, 1905-23, U. of Va. Author: The Causes of the French Revolution, 1888; John Randolph, a Character Sketch, 1898, also numerous hist. and miscellaneous revs. and articles. Address: University, Va.

DABNEY, Samuel Gordon, M.D.; b. at Charlottesville, Va., Aug. 6, 1860; s. W[illegible] and Susan Fitzhugh (Gordon) D.; M.D., U. of Va., 1883, M.D., U. of Louisville, 1883, studied in [illegible] and Vienna; m. Louisa Higgins Allen, of Louisville, Ky., Dec. 21, 1887; children—Mary Allen (Mrs. George Ezra Woodruff), William Cecil. Practiced at Louisville since 1885, prof. diseases of ear, nose and throat and clin. prof. diseases of the eye, U. of Louisville, Med. Dept.; mem. staff Louisville City Hosp., Norton Memorial Infirmary. Fellow Am. Coll. Surgeons; mem. A.M.A., Ky. State Med. Assn., Am. Acad. Ophthalmology and Oto-Laryngology. Episcopalian. Club: Pendennis. Home: [illegible] S. Third Av. Office: 900 Starks Bldg., Louisville, Ky.

DABO Leon, artist; b. Detroit, Mich., July 9, 1868; s. Ignace Scott and Ma[illegible]; studied at École des Arts Décoratifs, Acad. [illegible], and with Daniel Urrabieta Vierge, Paris, and with G[illegible] at Rome and Florence. Represented in the Luxembourg Mus., Paris; Met. Mus. Art, New York; Imperial Mus. Art, Tokio, Japan; Nat. Gallery, Ottawa, Can.; Mus. Arts and Sciences, Brooklyn; Nat. Gallery, Washington; Mus. of Art, Detroit; Art Inst. Chicago; John Herron Inst., Indianapolis; Mus. of Art, Toledo; Muncie [illegible] Art Assn.; Saginaw (Mich.) Art Assn.; Poland Spring (Me.) M[illegible]; C[illegible] Mus., St. Louis; Mus. of Art, Montclair, N.J.; Milwaukee Art Assn.; Mus. of Art, Boston; Hackley Art Gallery, Muskegon, Mich.; Nat. Arts Club, New York; Arbuckle Inst., Brooklyn; Montreal Art Assn.; Tuskegee (Ala.) Inst.; Mus. of Art, Lyons, France; Baltimore Mus. of Art; Delgado Mus. of Art, New Orleans, and many others. Art dir. Arbuckle Inst., Brooklyn. Executed mural paintings, "The [illegible]" and "The [illegible]", Church of St. John the Baptist, Brooklyn; [illegible] [illegible] Flower Memorial Library, Watertown, N.Y., etc. Mem. [illegible], Poets [illegible] [illegible], Hopkin Club [illegible], Nat. Assn. [illegible] Allied Artists [illegible], Japan Soc., [illegible] Art League, Brooklyn Soc. Artists, Mural Painters, Painters and Sculptors Soc., [illegible] fellowship (Richmond, Va.), Whistler Memorial Assn. (Lowell, Mass.), Lowell Art. Assn. Served with A.E.F. as 1st lt. and [illegible] 1918[illegible], with [illegible] of interpreters attached to 27th Div. [illegible] Army of Occupation, and aide to Maj. Gen. [illegible], mustered out, Sept. 1919. Studio: 2[illegible] Riverside Drive, New York, N.Y.

DABO Theodore Scott, painter; Oct. 18, 187- Nov. 17, 1928. See Vol. 11 1912-13.

DA COSTA, (John) Chalmers, surgeon; b. Phila., Nov. 15, 186[illegible]; s. George [illegible] and Marcella (Beasley) D.; prep. edn., Friends' Central Sch., Phila.; grad. U. of Pa., [illegible], 1882, M.D., Jefferson Med. Coll., 1885; m. Mary R. B[illegible]. Resident [illegible] Phila. Hosp., 1885[illegible]; demonstrator anatomy [illegible] Phila. Hosp., 1886-87; [illegible] Jefferson Med. Coll., 1887, [illegible] [illegible] Hosp. [illegible] prof. [illegible] Med. Coll. [illegible] of surgery, 1900, Samuel [illegible] Phila. Hosp. [illegible] 1901—. Surgeon [illegible] Phila. Hosp. [illegible] Hosp. since 1896. [illegible] Phys. [illegible] Am. Surg. Assn. [illegible] [illegible] [illegible] [illegible] of [illegible] Anatomy, 1905 [illegible]

TELEPHONE MURRAY HILL 2-6227
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44 WEST FORTY-FOURTH STREET
NEW YORK 36, N.Y.

July 17, 1959

W. H. SMYTH
PRESIDENT

Mr. Leland L. Anderson
Remington Rand Univac Division
of Sperry Rand Corporation
St. Paul 1, Minnesota

Dear Mr. Anderson:

Your clear, concise, and extremely interesting article,"Nikola Tesla- Last of the Pioneers ?", in the July 15th english language edition of "American Srbobran", the Serbian language paper published in Pittsburgh, is the best thing on Tesla I've ever seen. Was it possibly a paper you had prepared for some technical body ?

Twenty years operation of my own company in the former Kingdom of Yugoslavia (1921-1941) and regular contact with Yugoslav refugees, "ship jumpers" and others, who come to me for freely given help in their troubles, explains my interest in Tesla, a man who, unfortunately, never received while living, the credit which was due him.

I met Tesla several times after my return to America in March 1942, and attended his funeral at the Cathedral of St. John the Divine January 7, 1943. And that was, in a way, as strange as his life, for of the large crowd present at the Cathedral, only the priest and his immediate relatives and friends, possibly two cars of them, were allowed to go on to the final desposition of his remains.

You deserve congratulations for your having taken the time to prepare your paper or article, which surely has helped to make Tesla better known. Frankly our country owes a lot to Tesla and the other Yugoslav inventor, Pupin, who, however, in addition to being a great patriot, was also a fine businessman and master of publicity.

Whenever I see the name "Sperry Rand Corporation" it reminds me of my years in Yugoslavia, where in 1930, I became agent for a number of aviation people, Serry Gyroscope among them, in addition to my regular lines in distributing Chrysler, Plymouth, Packard, Caterpillar, Goodyear and a number of other American products.

Tito confiscated my Yugoslav assets after he took over. Then I started this little company, Threadmiller, to produce and sell two tools for saving time and trouble at tapping and threading on lathes and turret lathes. I don't know whether you are in manufacturing or selling, or in engineering with your company, but shall appreciate it greatly if you will be so kind as to pass the enclosed folders on to whoever it is in your company who decides on tools. They really are good, as shown by seven successive orders from the Naval Research Laboratory, Washington, D.C., and from the ITT Laboratories at Nutley, N.J. I should be glad to receive an initial order from you people. With best regards,

Sincerely
William H. Smyth

Notes given to G H Clark by E G Gage
December 1, 1942

RE TESLA

The first time that Tesla saw a radio station--the interior, that is--was in 1910, when E. G. Gage took him on a tour through the wireless station of the Radio Tel. and Tel. Co., "MR", in the Metropolitan Building, New York City.

Gage was an operator for the Radio Co. at the time, and had met Tesla several times previously, at the factory of Fritz Lowenstein, who was a close friend of Gage's. Lowenstein had worked several years for Tesla, notably during the latter's experiments at Pike's Peak..

Tesla's office was in the Metropolitan Tower, on the 24th. floor, while the Radio Tel. and Tel. Co's. office was just above, on the 25th. Nevertheless, Tesla had never seen the station (which was ~~sx~~ in the main building, not in the tower) until the date given above.

Gage, who was by no means immune against the ladies, had been in Tesla's offices after the meeting ~~x~~t Lowenstein's, and at one of these times he asked Tesla's stenographer (who was far from being bad-looking) to visit the station. Tesla overheard the invitation, and at once "invited himself in". Several weeks later, the visit took place.

Tesla paid no particular attention to anything except the coupling coils. "There are my coils", he said. Further, pointing to the condensers, spark gap, etc., he said " These do not interest me; they are not mine; but those coils were my idea and they interest me greatly".

When the Radio T. and T. Co. broke up, Tesla sent for Gage, and would have given him a job, but Gage told him that a job had already been found, with the Marconi Co. Mr. Sammis of that company was going to send him as operator to the new station in the Metropolitan Tower. Gage took that job, but today his main regret is that he did not accept Tesla's offer.

Incidentally, as a sort of poor taper-off, this same year--1910--- marks the date when Gage first made my acquaintance. I went to MR to measure the antenna constants for the Navy (see rough log,1910) and met Gage there. I am glad to say that our friendship has continued unbroken down the intervening thirty two years.

G.H.Clark

Ex E G Gage

SRM 4 1051

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[illegible] [illegible]

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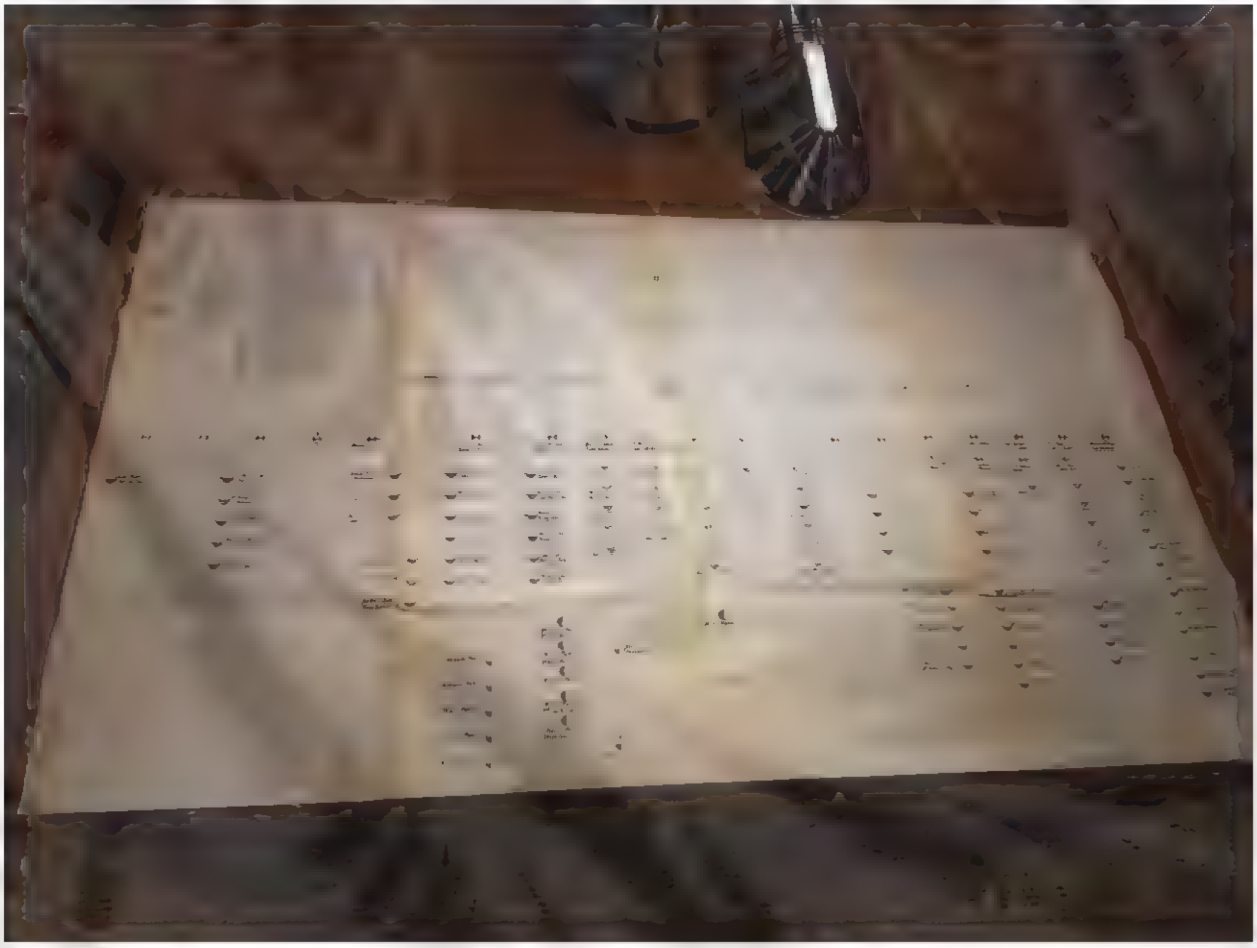
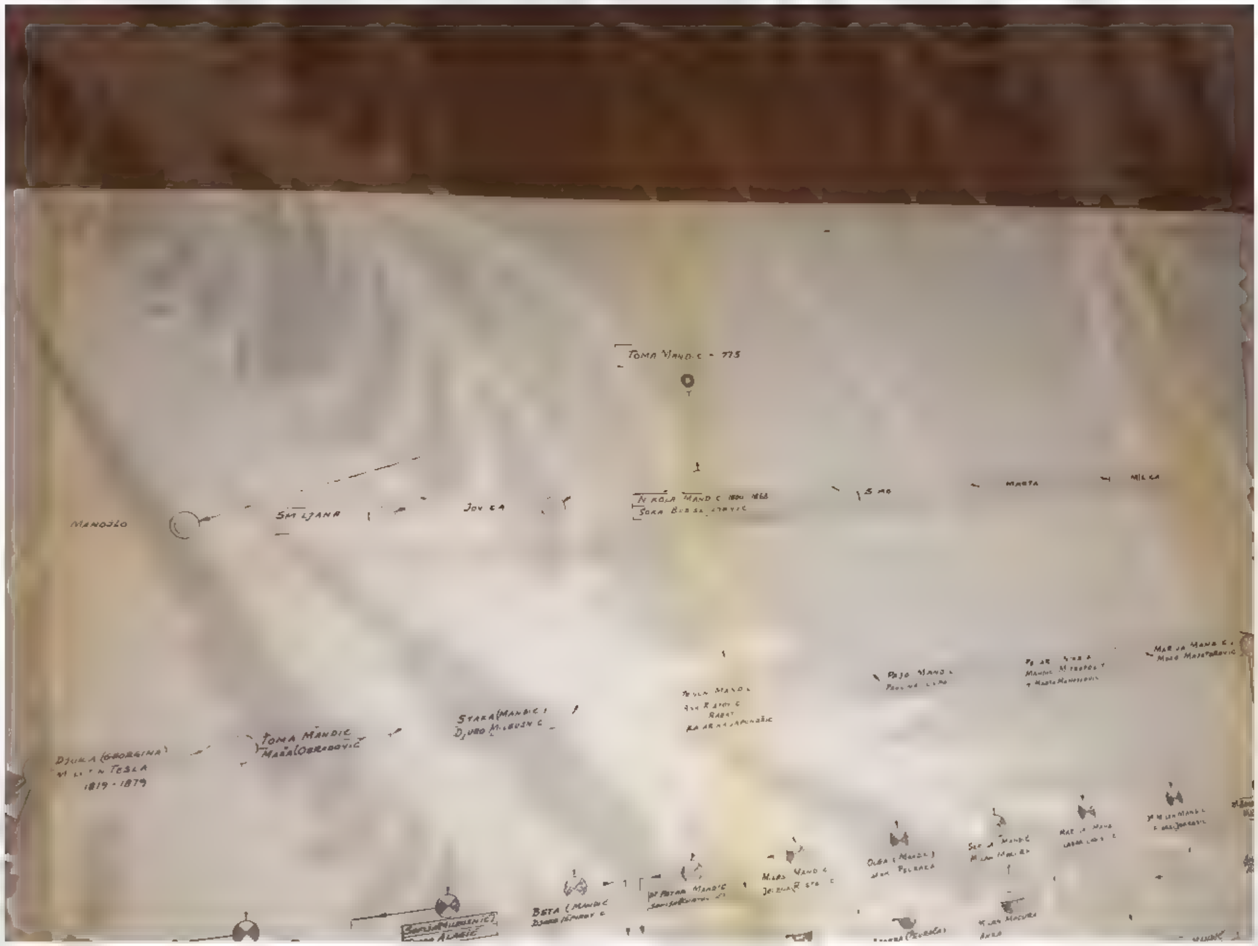
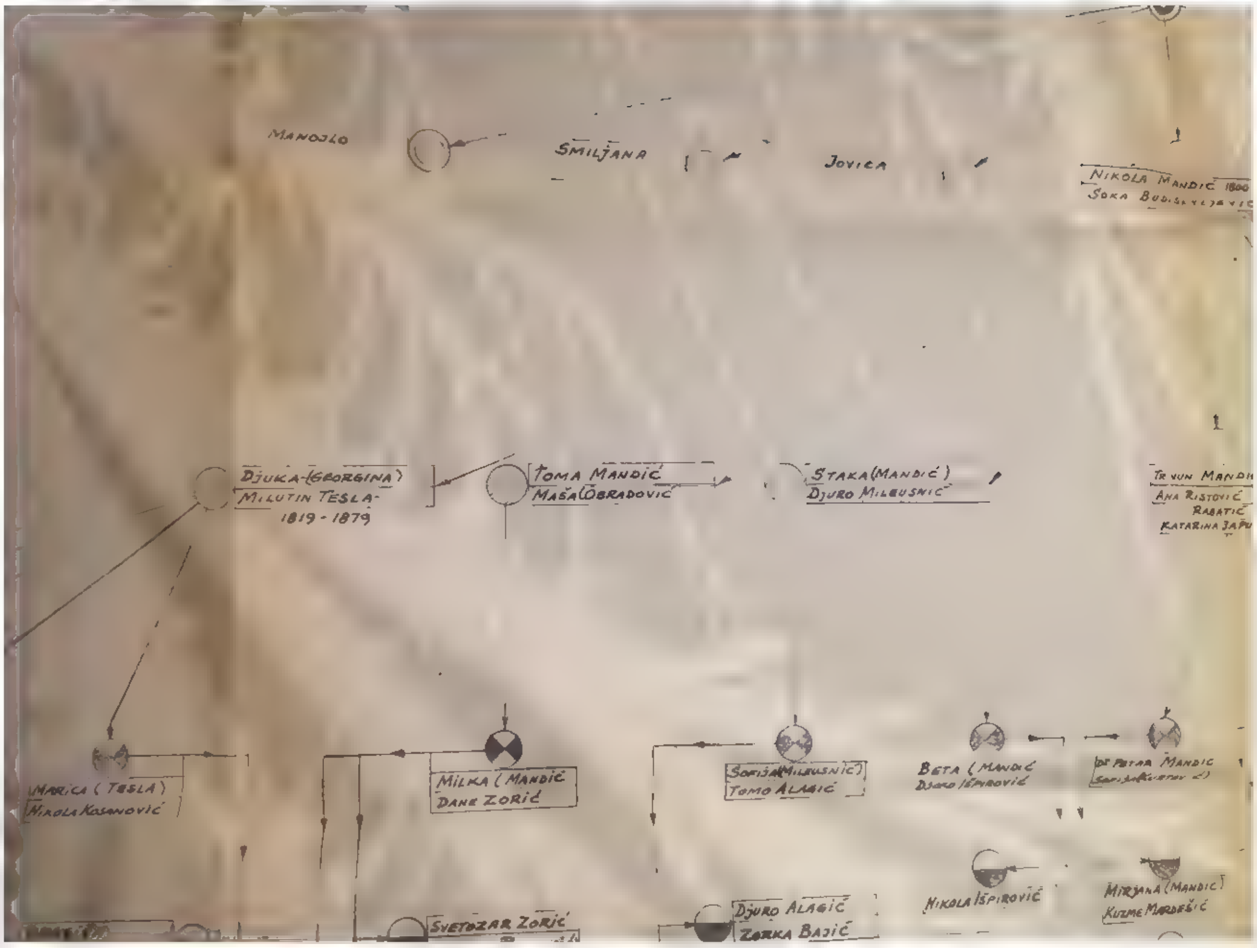
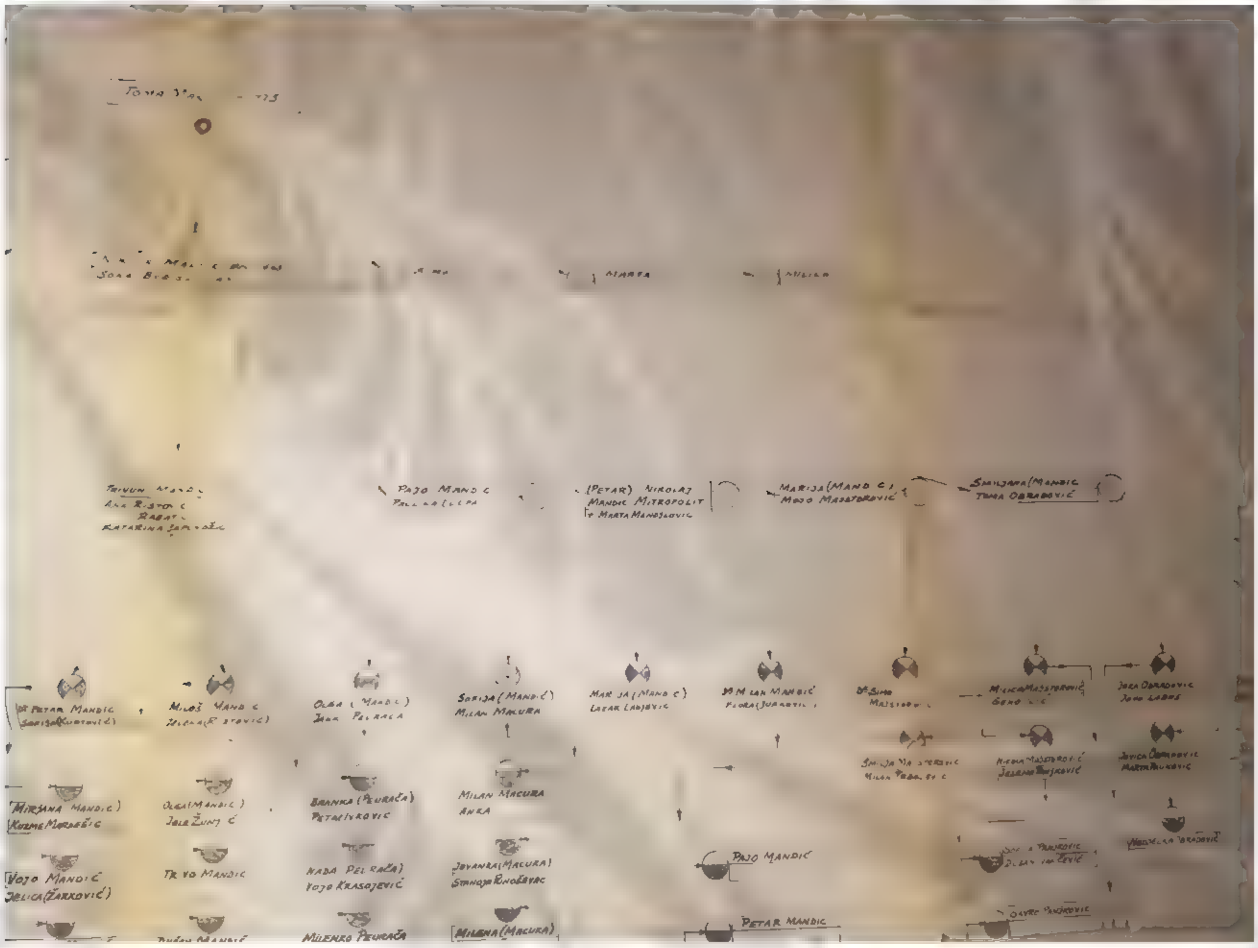
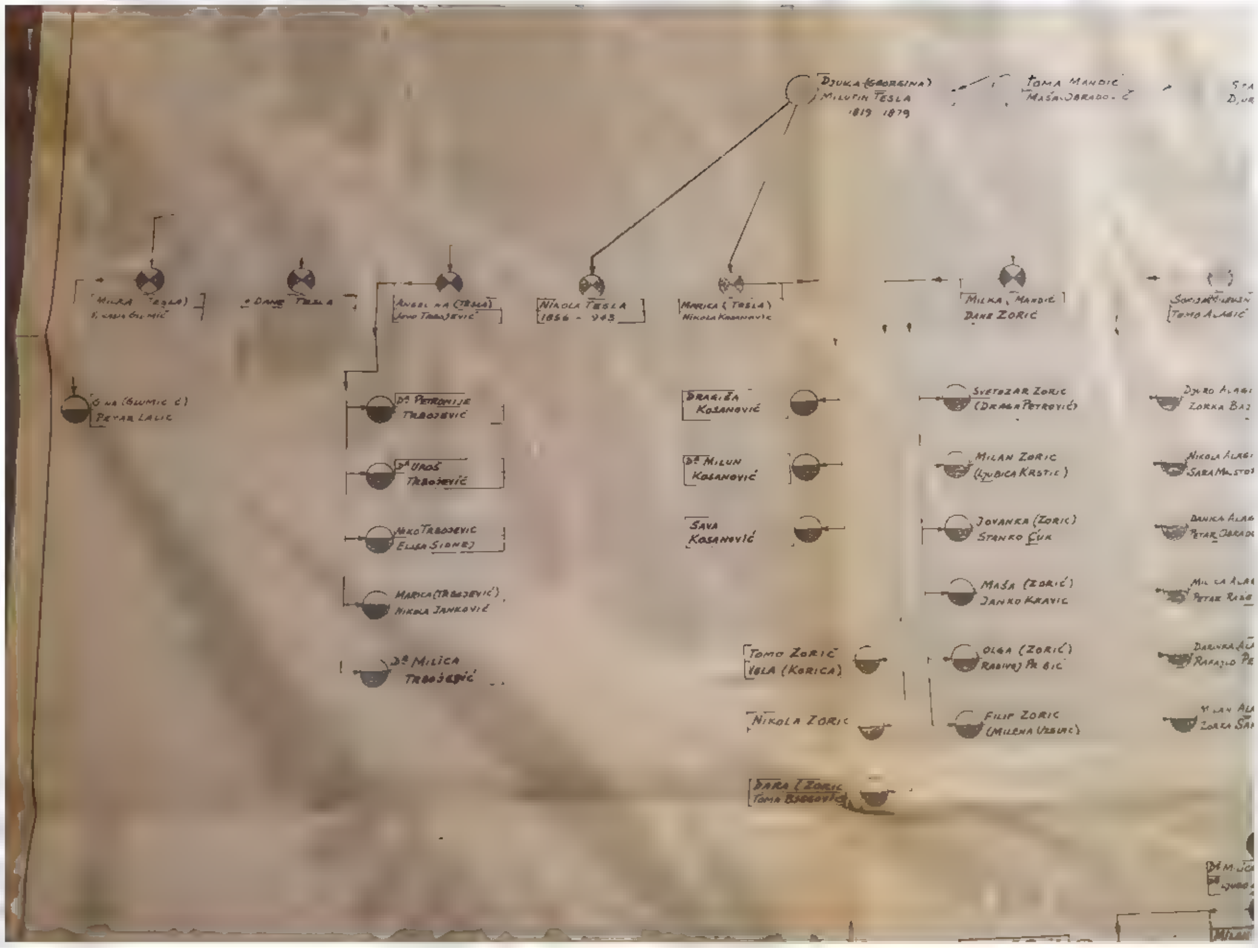



MANOJLO
SMILJANA
TOMA MANDIC
MARA (OBRADOVIĆ
1819 - 1879
MARTA
MILKA

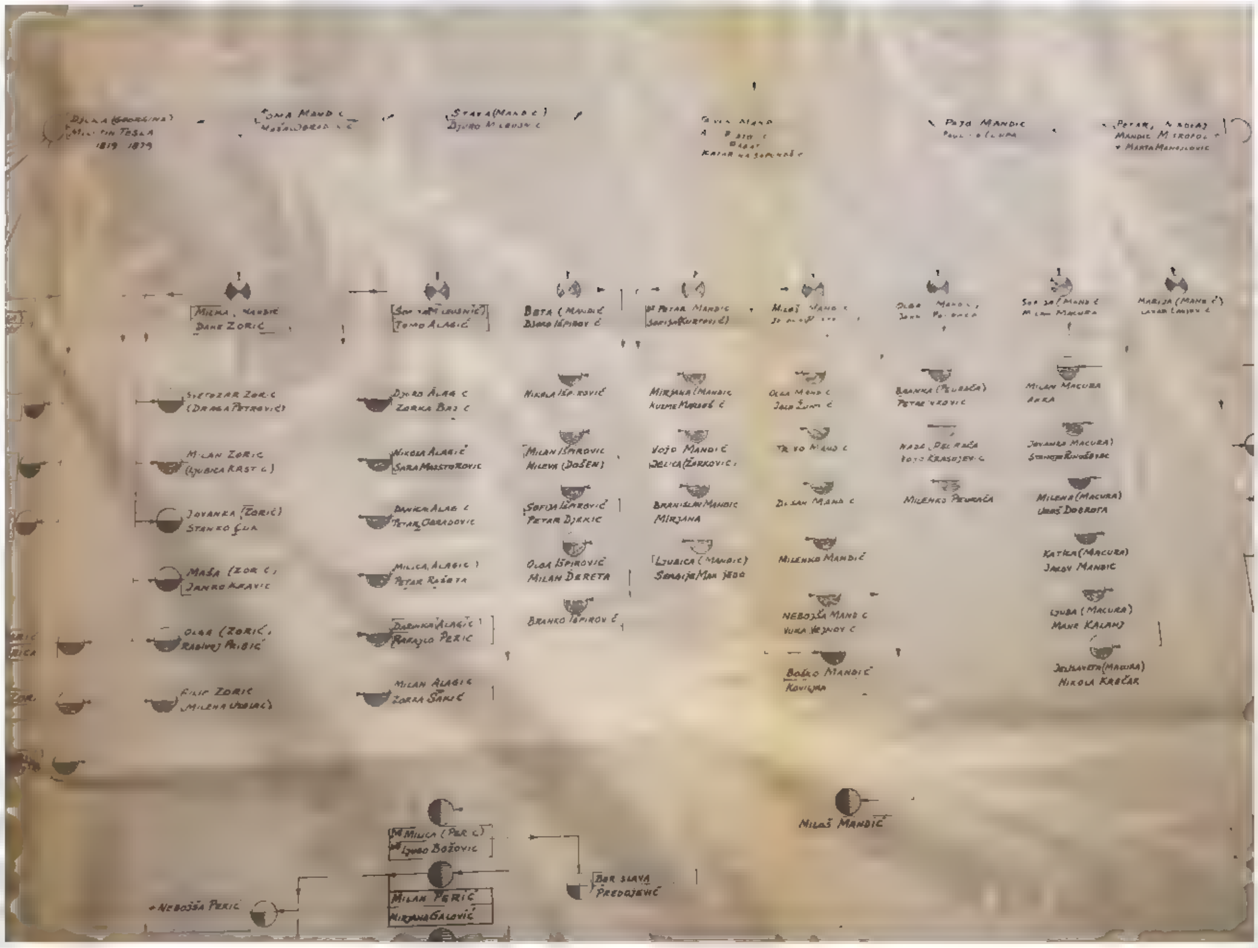


MANOJLO
SMILJANA
JOVICA
NIKOLA MANDIĆ 1800
DJUKA (GEORGINA)
MILUTIN TESLA
1819 - 1879
TOMA MANDIĆ
MAŠA OBRADOVIĆ
STAKA (MANDIĆ)
DJURO MILEUSNIĆ
ANA RISTOVIĆ
RABATIĆ
MARICA (TESLA)
NIKOLA KOSANOVIĆ
MILKA (MANDIĆ
DANE ZORIĆ
TOMO ALAGIĆ
BETA (MANDIĆ
DJURO IŠPIROVIĆ
NIKOLA IŠPIROVIĆ
MIRJANA (MANDIĆ)
KUZME MARDEŠIĆ
SVETOZAR ZORIĆ
DJURO ALAGIĆ
ZORKA BAJIĆ

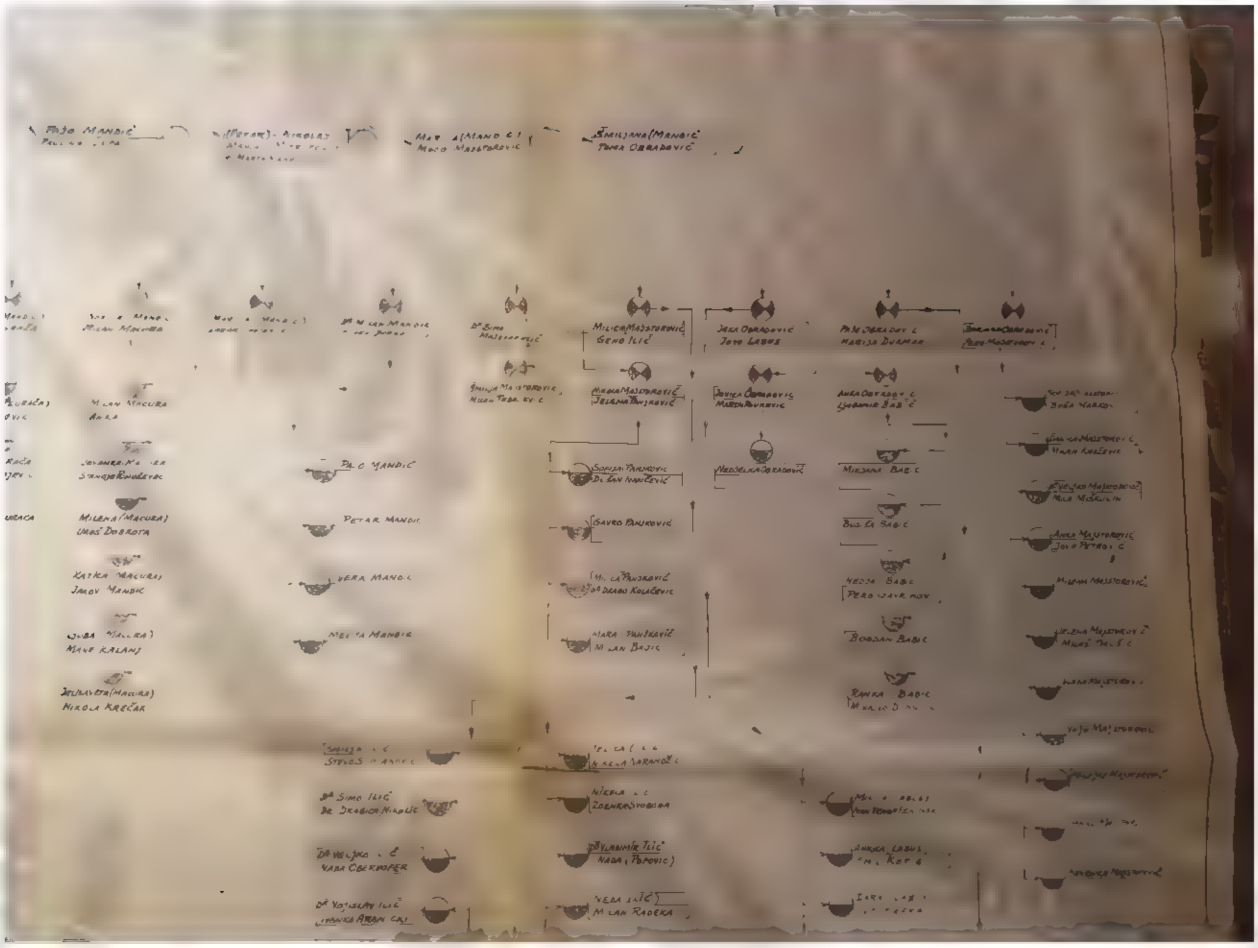

PAJO MANDIĆ
(PETAR) NIKOLAJ MANDIĆ MITROPOLIT
SMILJANA (MANDIĆ
OLGA (MANDIĆ)
SOFIJA (MANDIĆ)
MILAN MACURA
MIRJANA MANDIĆ)
BRANKA (PEURAČA)
MILAN MACURA
ANKA
VOJO MANDIĆ
JELICA (ŽARKOVIĆ)
NADA PEURAČA)
VOJO KRASOJEVIĆ
JOVANKA (MACURA)
PAJO MANDIĆ
MILENKO PEURAČA
MILENA (MACURA)
PETAR MANDIĆ



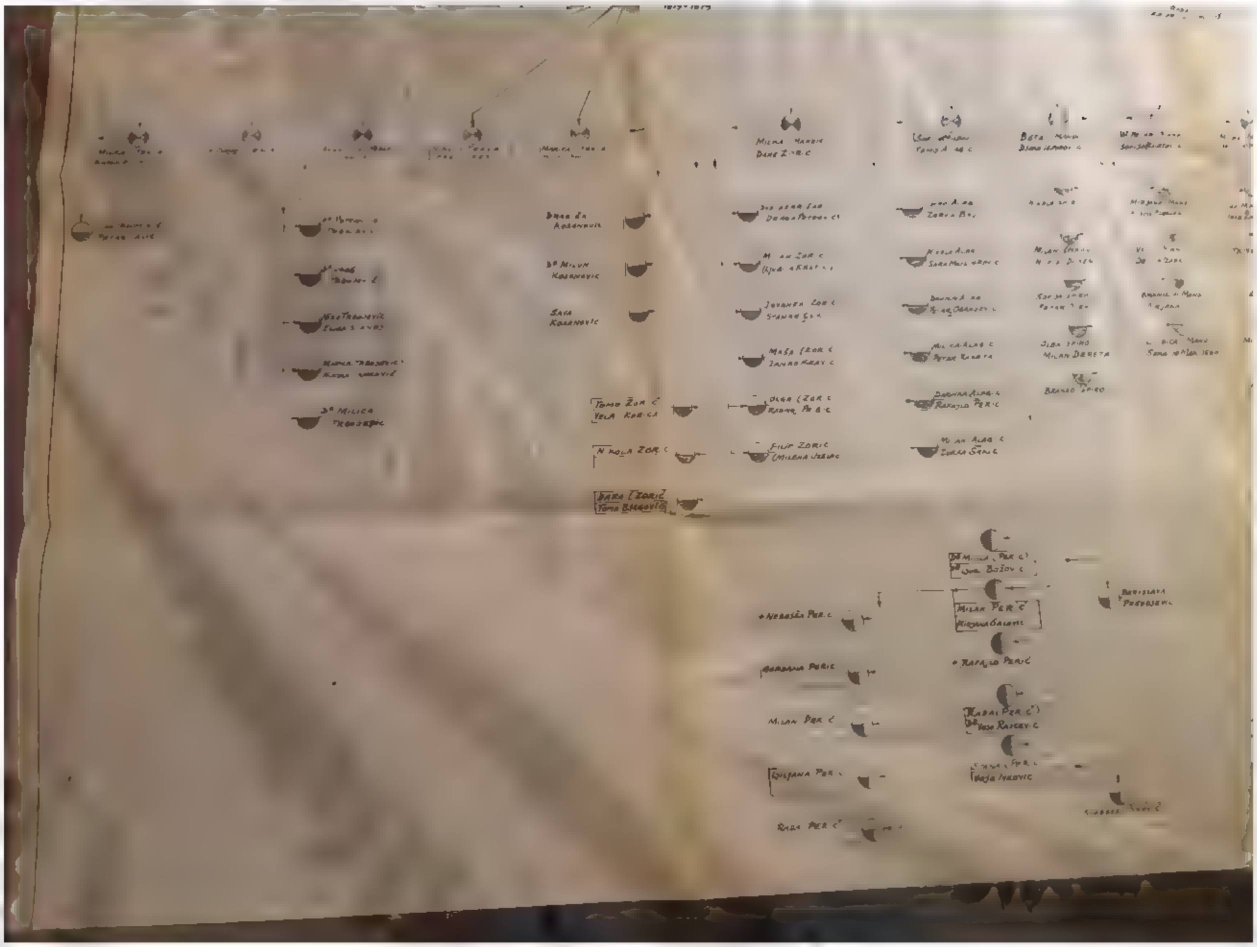
Milutin Tesla
1819 1879
Toma Mandić
Dane Tesla
Nikola Tesla
1856 - 1943
Marica (Tesla)
Nikola Kosanović
Milka Mandić
Dane Zorić
Petar Lalić
Trbojević
Dr. Uroš Trbojević
Nikola Janković
Dr. Milica Trbojević
Dragiša Kosanović
Dr. Milun Kosanović
Sava Kosanović
Svetozar Zorić
Milan Zorić
Jovanka (Zorić)
Janko Kravić
Olga (Zorić)
Filip Zorić
Tomo Zorić
Nikola Zorić



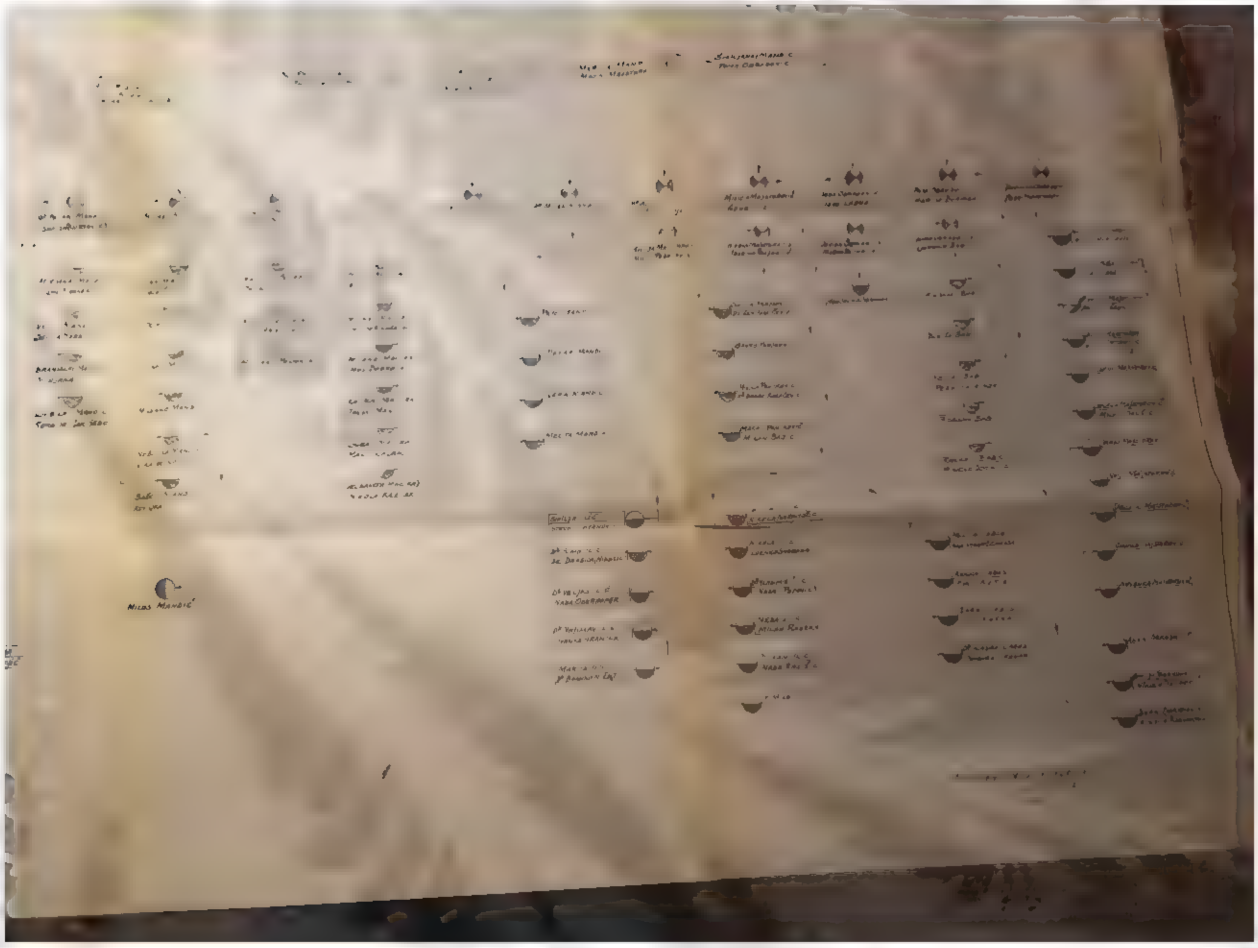
MILOŠ MANDIĆ
MILAN PERIĆ
MIRJANA GALOVIĆ

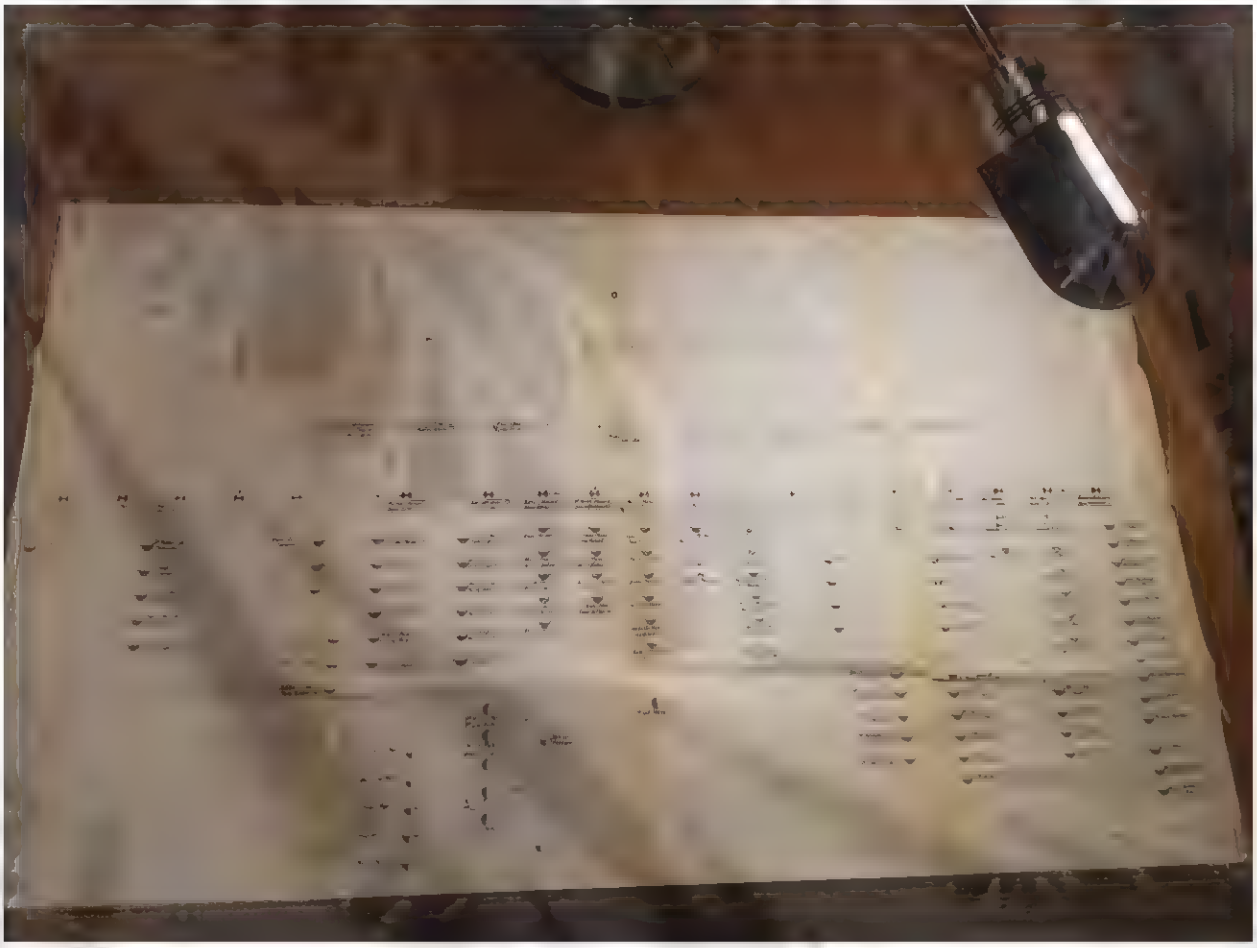


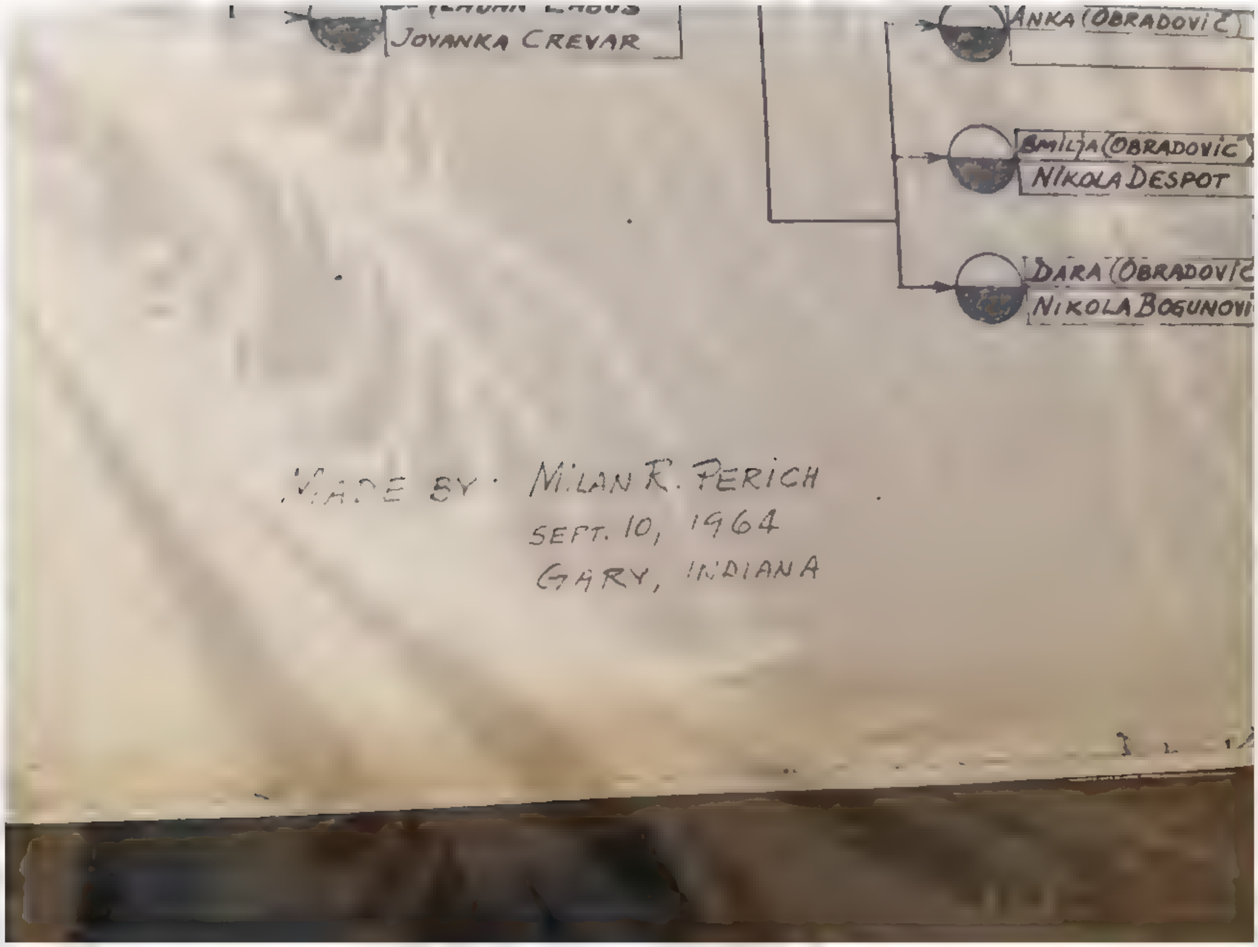
PAJO MANDIĆ
MOJO MAJSTOROVIĆ
SMILJANA (MANDIĆ)
TOMA OBRADOVIĆ
MILAN MACURA
Dr SIMO MAJSTOROVIĆ
MILICA (MAJSTOROVIĆ)
GENO ILIĆ
JEKA OBRADOVIĆ
JOVO LABUS
PAJE OBRADOVIĆ
MARIJA DURMAN
MILAN MACURA
MIRKO MAJSTOROVIĆ
JELENA PANJKOVIĆ
JOVICA OBRADOVIĆ
ANKA OBRADOVIĆ
LJUBOMIR BABIĆ
PAJO MANDIĆ
SOFIJA PANJKOVIĆ
NEDELJKA OBRADOVIĆ
MIRJANA BABIĆ
MILENA (MACURA)
UROŠ DOBROTA
PETAR MANDIĆ
GAVRO PANJKOVIĆ
KATKA (MACURA)
JAKOV MANDIĆ
VERA MANDIĆ
Dr DRAGO KOLAČEVIĆ
NEDJA BABIĆ
MILENA MAJSTOROVIĆ
MANE KALANJ
MARA PANJKOVIĆ
MILAN BAJIĆ
BOGDAN BABIĆ
JELISAVETA (MACURA)
NIKOLA KREČAR
RANKA BABIĆ
VOJO MAJSTOROVIĆ
Dr SIMO ILIĆ
Dr DRAGICA NIKOLIĆ
ZDENKA SVOBODA
Dr VLADIMIR ILIĆ
NADA (POPOVIĆ)
MARA OBERHOFER
Dr VOJISLAV ILIĆ
MILAN RADEKA



SAVA KOSANOVIĆ
TOMO ZORIĆ
FILIP ZORIĆ
MILAN PERIĆ
RAFAILO PERIĆ
DARA ZORIĆ


Milos Mandić




JOVANKA CREVAR
ANKA (OBRADOVIC
SMILJA (OBRADOVIC
NIKOLA DESPOT
DARA (OBRADOVIC
NIKOLA BOGUNOVI
MADE BY: MILAN R. PERICH
SEPT. 10, 1964
GARY, INDIANA

UNITED STAT'S DEP[illegible]RTMENT OF JU[illegible]TICE
IMMIGRATION AND NA[illegible]

Octobe[illegible] 1[illegible], 196[illegible]

[illegible]

Leland I. Anderson

Dear Sir:

In reply to your recent request, the following information is furnished from the records of this Service:

Name of Subject: DR. NIKOLA TESLA

Age or Date and Place of Birth: unknown

Other (indicate) / Remarks: This Service has located [illegible] NIKOLA TESLA in the Common Pleas Court, [illegible] New York on July 30, 1891. He filed Pe[illegible] Naturalization N . 701 in that court [illegible] Certificate of Natur[illegible]lization No. 3[illegible] [illegible] information appearing in the recor[illegible] Residence, Hotel Gerlach, W. 27th St.,N.Y.[illegible]; [illegible] Civil Engineer; Date of Arri[illegible]l, June, [illegible]; [illegible] Allegiance, Austrian."

The above information was taken from the document indicated below which was recorded on July 30, 1891
(Date)

Check one:

[ ] Birth Certificate

[ ] Petition for Naturalization

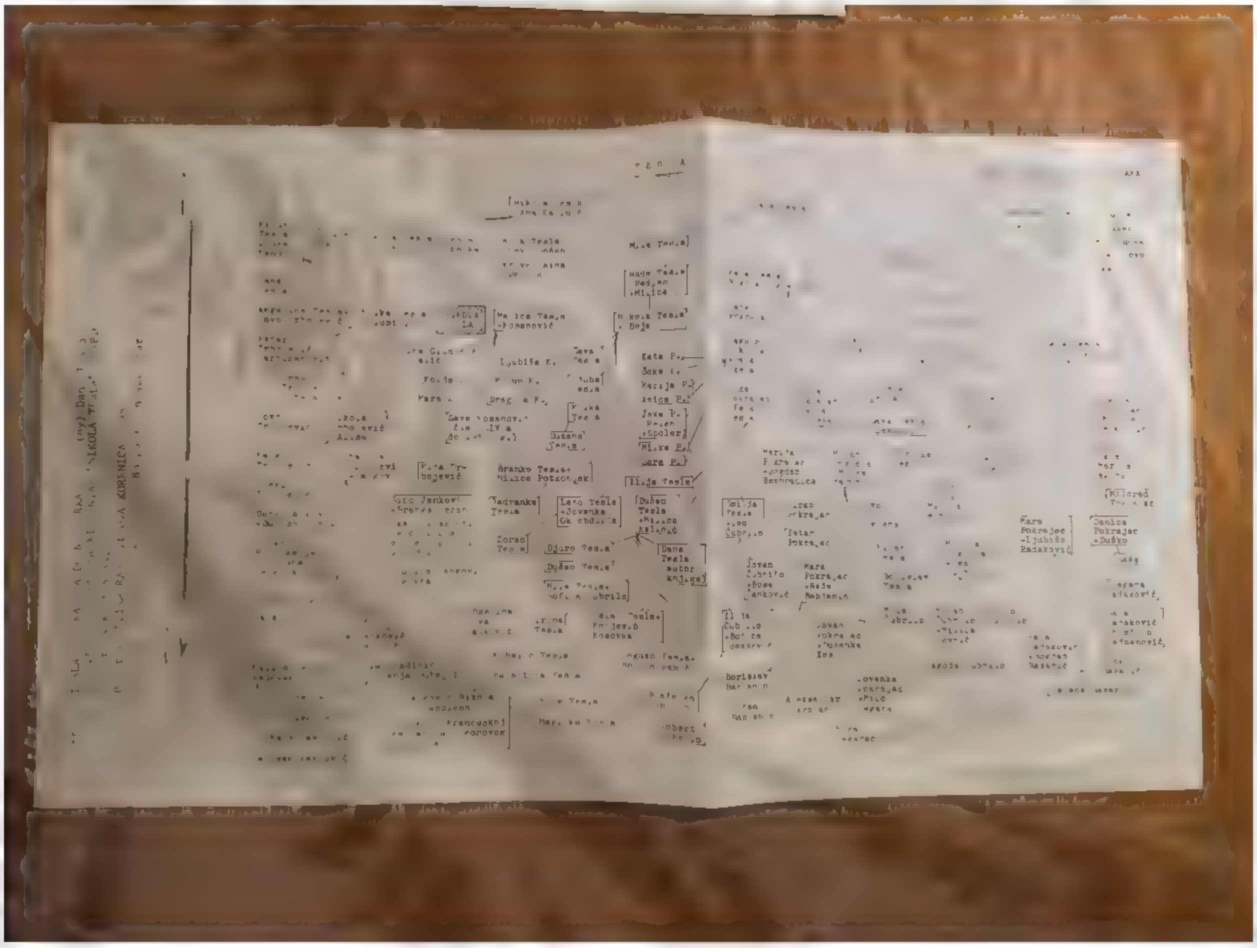
[X] Other County Clerk's records.
(describe)

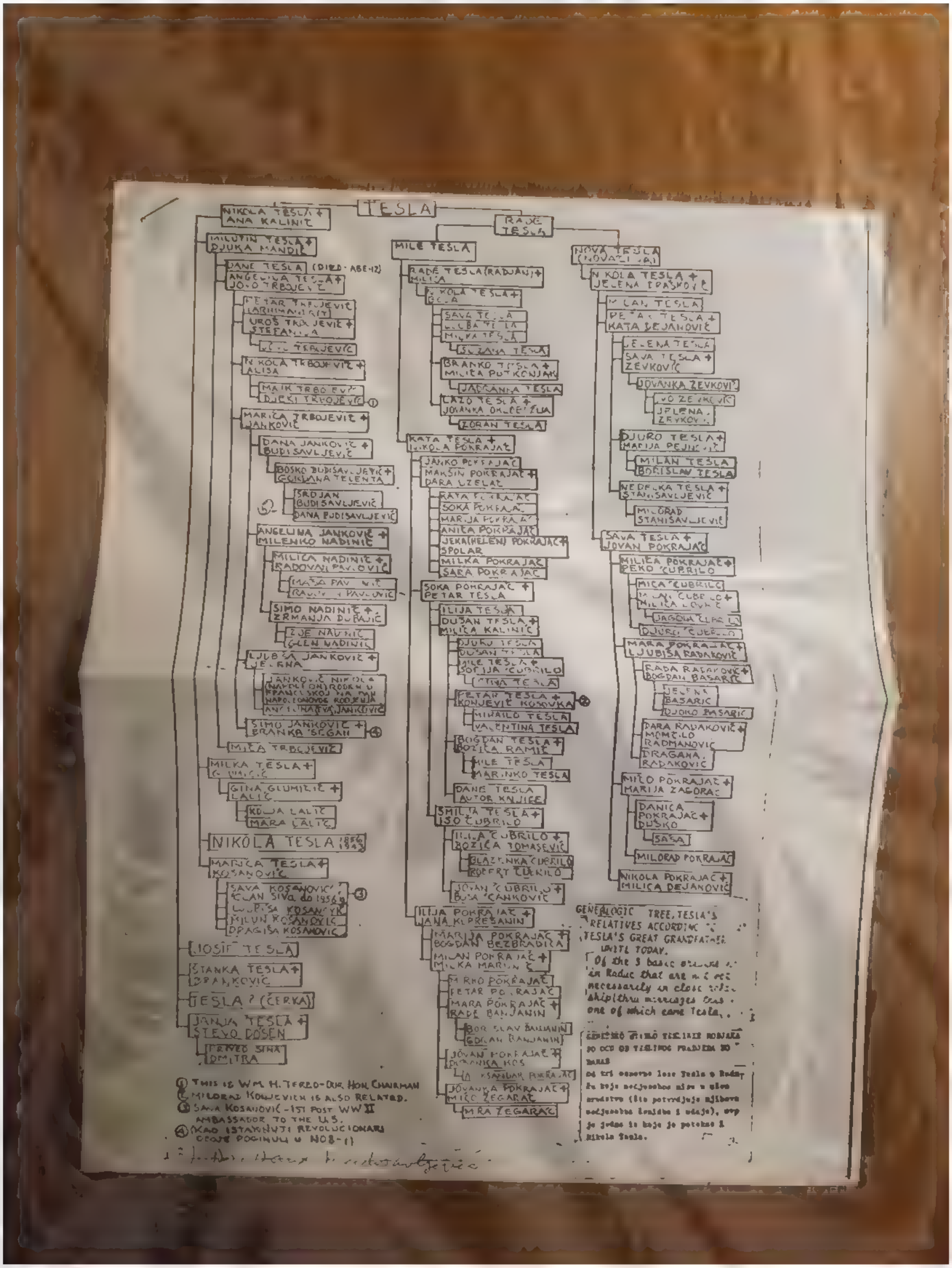
Sincerely yours,

[illegible]

Deputy District Director

[illegible]




TESLA
NIKOLA TESLA +
ANA KALINIĆ
RADE TESLA
MILUTIN TESLA +
DJUKA MANDIĆ
MILE TESLA
NOVA TESLA
DANE TESLA (DIED - AGE 12)
ANGELINA TESLA +
JOVO TRBOJEVIĆ
RADE TESLA (RADJAN) +
MILICA
NIKOLA TESLA +
JELENA DRAŠKOVIĆ
MILAN TESLA
PETAR TESLA +
KATA DEJANOVIĆ
BRANKO TESLA +
MILICA PUTNIKOVIĆ
ZORAN TESLA
KATA TESLA +
NIKOLA POKRAJAC
DJURO TESLA +
MARIJA PEJNOVIĆ
MILAN TESLA
BORISLAV TESLA
NEDELJKA TESLA +
STANISAVLJEVIĆ
MILORAD STANISAVLJEVIĆ
MARICA TRBOJEVIĆ +
JANKOVIĆ
DANA JANKOVIĆ +
BUDISAVLJEVIĆ
SRDJAN BUDISAVLJEVIĆ
DANA BUDISAVLJEVIĆ
ANGELINA JANKOVIĆ +
MILENKO NADINIĆ
MILICA NADINIĆ +
RADOVAN PAVLOVIĆ
SIMO NADINIĆ +
ZRMANJA DUBAJIĆ
LJUBIŠA JANKOVIĆ +
SIMO JANKOVIĆ +
BRANKA ŠEGAN
MIĆA TRBOJEVIĆ
JANKO POKRAJAC
MAKSIM POKRAJAC +
DARA UZELAC
KATA POKRAJAC
SOKA POKRAJAC
MARIJA POKRAJAC
ANICA POKRAJAC
JEKA (HELEN) POKRAJAC +
SPOLAR
MILKA POKRAJAC
SARA POKRAJAC
SOKA POKRAJAC +
PETAR TESLA
ILIJA TESLA
DUŠAN TESLA +
MILICA KALINIĆ
SAVA TESLA +
JOVAN POKRAJAC
MILICA POKRAJAC +
PEKO ĆUBRILO
MIĆA ĆUBRILO
DJURO ĆUBRILO
MARA POKRAJAC +
LJUBIŠA RADAKOVIĆ
RADA RADAKOVIĆ +
BOGDAN BASARIĆ
JELENA BASARIĆ
DJURO BASARIĆ
DARA RADAKOVIĆ +
MOMČILO RADMANOVIĆ
DRAGANA RADAKOVIĆ
PETAR TESLA +
KONJEVIĆ KOSOVKA
MIHAILO TESLA
VALENTINA TESLA
BOGDAN TESLA +
BOŽICA RAMIĆ
MILE TESLA
MARINKO TESLA
DANE TESLA
AUTOR KNJIGE
MIĆO POKRAJAC +
MARIJA ZAGORAC
DANICA POKRAJAC +
DUŠKO
SAŠA
MILORAD POKRAJAC
NIKOLA POKRAJAC +
MILICA DEJANOVIĆ
MILKA TESLA +
GINA GLUMIZIĆ +
LALIĆ
MARA LALIĆ
SMILJA TESLA +
ISO ĆUBRILO
ILIJA ĆUBRILO +
BOŽICA TOMAŠEVIĆ
BLAŽENKA ĆUBRILO
ROBERT ĆUBRILO
JOVAN ĆUBRILO +
BOSA ĆANKOVIĆ
NIKOLA TESLA 1856 1943
MARICA TESLA +
KOSANOVIĆ
SAVA KOSANOVIĆ
ČLAN SIVA do 1956 g.
MILUN KOSANOVIĆ
DRAGIŠA KOSANOVIĆ
ILIJA POKRAJAC +
ANA KUPREŠANIN
MARIJA POKRAJAC +
BOGDAN BEZBRADICA
MILAN POKRAJAC +
MILKA MARJAN
MARKO POKRAJAC
PETAR POKRAJAC
MARA POKRAJAC +
RADE BANJANIN
JOVANKA POKRAJAC +
MIĆO ZEGARAC
MIRA ZEGARAC
JOSIF TESLA
STANKA TESLA +
BRANKOVIĆ
TESLA ? (ĆERKA)
JANJA TESLA +
STEVO DOŠEN
PRIVED SINA DMITRA
GENEALOGIC TREE, TESLA'S RELATIVES ACCORDING TESLA'S GREAT GRANDFATHER UNITE TODAY.
Of the 3 basic ... in Raduc that are ... necessarily in close ... ship (thru marriages ... one of which came Tesla.
1 THIS IS WM. H. TERBO - OUR HON. CHAIRMAN
2 MILORAD KONJEVICH IS ALSO RELATED.
3 SAVA KOSANOVIĆ - 1ST POST WW II AMBASSADOR TO THE U.S.
4 KAO ISTAKNUTI REVOLUCIONARI OBOJE POGINULI U NOB-u

dr. Dana Budsavljevic
41000 Zagreb
Vlaska 72a
Yugoslavia

Zagreb,15.V.1989

Poštovani i dragi gospodine Kosanoviću,

Spriječena poodmaklim godinama i nekim nesnosnim gripama propustila sam i prekoračila sve rokove da Van se javim.
Činim to tek sada!

Osjećam se vrlo ponosna na pažnji koju ste mi pokazali izabravši me za počasnog člana uvaženog Društva Nikola Tesla. Ponos nas, njegovih najbližih potomaka, ispunja nas zadovoljstvom i srećom.
Ima medju nama (ja nisam ta) od vremena do vremena pojedinaca u kojima zasine iskra Teslinog genija. Ja imam na pr. unuku koja je vrlo nadarena za matematiku i fiziku; upravo joj je 14 godina i odlučuje se za t.zv. "matematičku gimnaziju".
Nešto svakako hoću da vam kažem. Kad stignete ovamo kako ste najavili, Učinit ćete mi veliko veselje ako nadjete vremena da me posjetite u Zagrebu. To, molim Vas, svakako unesite u svoj "itineraire".
Onda ćemo o svemu razgovarati: sve ću vam pokazati i kazati što vas interesira pa i napisati što budete željeli. Pregledat ćemo moju biblioteku a ima i drugih podataka o duhu te čitave familije.
Veselo vas očekujem i molim, da mi učinite tu veliku stvar da se svakako vidimo. Ja više nisam za naporna i duža putovanja i zato treba svakako da mi dodjete u Zagreb

Srdačni pozdrav

Dana Budisavljević

701 [illegible] St.
[illegible] Ind.
Jan. 30 1965

Dear Anderson, —

Milan Perich stopped by on his way home from work yesterday afternoon and left 2 copies of the family tree — one for you and one for me. He repeated his request over the phone Mon. evening that you give nobody a copy of it. He appreciates what you have been doing to promote interest in Tesla and I think you are most welcome to use the information as you see fit. Perich has known about you for a long time, he said.

I studied the family tree and I conclude that Tesla's mother was a sister of Milan Perich's great grandmother. Another way, Tesla was a first cousin of Milan's grandmother.

I'm sure you can locate Milan Perić and his family on the family tree. He said that there are numerous priests on this chart — also that there are other descendants of the Toma Mandić 1775* who they could not handily locate. Four people worked on the family tree as issued, specially for that 50th St Sava anniversary book.

I'm sorry that you had to wait 7 months for this print. You could just as well had a copy last November or December.

Best regards
Martin Cornelius

*(One is in Joliet, Ill. and another in Milwaukee, he said)

P.S. Milan is a fine looking man with graying black hair — I'd guess him to be 50.

[illegible]
June 29 196[illegible]

Dear Anderson, —

I called Milan Perich last evening and his daughter offered [illegible] me back, which he did about 7:30 PM. He had been at a funeral home.

I'm afraid I muffed what I was supposed to do — call for the family tree and send it on to you. That's why Perich never answered you and he didn't know me until ~~last~~ evening.

The family tree is on a tracing and he will get it blueprinted at The Budd Plant today and leave it at my apartment on the way home from work. He goes east past my apt often. The Budd plant is about 2 miles west of here. Perich lives about [illegible] miles east of here.

Perich told me that Tesla's mother and Perich's grandmother were sisters.

So you will be receiving a blueprint of that family tree shortly. Perich is burned up about the publisher's reduction in size and had hoped that it would have been on a folding page of twice the size lettering.

I'm glad to have helped you get a copy of this print.

Sincerely
Martin Cornelius

P.S. He expects you to keep this print in your own possession and give no one a copy of it.

DIES HERE AT 92

RIN E DUN AP JR

January 2[illegible],196[illegible]

Dear Mr.Anderson:

Thank you for your thoughtfulness in sending me the reproduction of the circular issued by Nikola Tesla in 1904; as you say "the memento of a bold dream".

Incidentally,I had a most interesting meeting with him in 1934 when I interviewed him, and even at that time he had some fascinating ideas which I wrote-up for The New York Times. Some of his thoughts on the future etc., also are covered in my book, "Communications in Space" published by Harper & Row in 1962 and revised edition 196[illegible].

Sincerely,

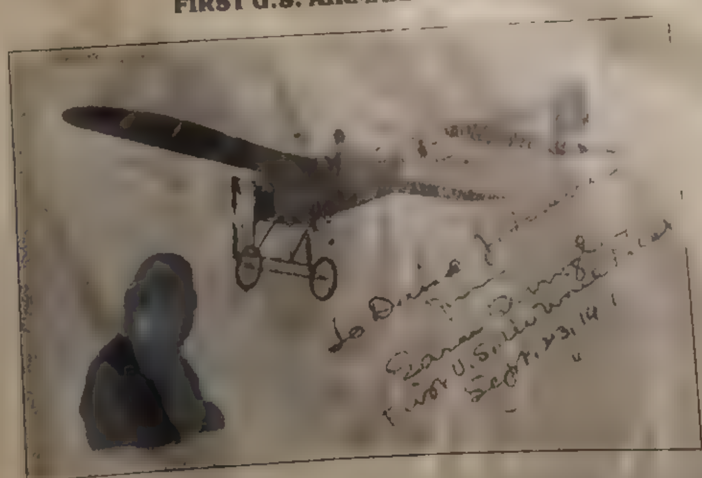
Orrin E. Dunlap, Jr.

11 Amherst Road
Great Neck, N.Y.

Tesla gave Earle Lewis Ovington and others a private showing of his telautomaton at Madison Square Garden. Ovington was an assistant to Tesla and also a financial backer from 1898-1910.

Ref.: Letter from John O. Ashton,
Sept. 22, 1953

FIRST U.S. AIRMAIL PILOT



[illegible] POSTCARD [illegible] EARLE OVINGTON WHO FLEW THE FIRST AIRMAIL [illegible] IN BLUE INK [illegible] FROM EARLE OVINGTON. [illegible] WITH [illegible] AN AUTOGRAPH NOTE SIGNED, SANTA BARBARA [illegible] U.S. AIR MAIL IN 1911 [illegible] ORIGINAL [illegible] MINOR SOILING, FINE SPLENDID PIECE $80.00 [illegible] PLANE & ROTARY [illegible] COOLED ENGINE) [illegible]

Niagara Falls Gazette
Monday, June 15, 1953

Orrin E. Dunlap

As editor of the Niagara Falls Gazette from 1890 to 1895, Orrin E. Dunlap left the imprint of his character and industry upon the history of this newspaper. He was in charge of news and editorial policy when the Gazette became a daily on March 17, 1891, and he contributed much to the solution of problems that confronted the paper in that period.

DUNLAP—In this city, June 13, 1953, Orrin E. Husband of the late Agnes Stevenson Dunlap. Father of Helen A., Charles M., Arthur S., all of this city, Orrin E. Dunlap Jr., New York City. Funeral services at Cornell & Daggett Chapel, 1617 Main St., Tuesday at 2 p.m. Rev. Arthur H. Schnurer D.D., officiating. Interment in Oakwood cemetery.

ORRIN E. DUNLAP
Symbol of Press Powers

ORRIN E. DUNLAP, FORMER EDITOR, DIES HERE AT 92

Noted Journalist Once Served Gazette, News, Later Was Acheson Aide

One of the most distinguished journalistic careers in Niagara frontier history and a life closely associated with the highlights of this city's colorful past, ended late Saturday with the death, after a short illness of Orrin E. Dunlap.

Mr. Dunlap, whose home for many years was at 1029 Cleveland avenue, died at Memorial hospital. He was 92 years of age.

Throughout the greater part of his eventful life Mr. Dunlap was the symbol, to the people of this community, of the American press and of the gathering and the dissemination of news.

For many years the best-known local reporter and correspondent for some of the world's greatest newspapers, he prepared on-the-scene records for readers here and throughout the world, and, as an editor, he brought the world's news to Niagara Falls.

Wrote Stories of Notables

As a newsman, Mr. Dunlap became an intimate of many of the men and women who performed feats of daring over the cataracts and in the rapids and he earned renown for his coverage of the visits here of ~~some~~ of the world's outstanding figures. With the soul of a true historian he maintained an exhaustive file of all events of significance in local annals and the index file and scrapbooks in his private "morgue" were regarded as a first class reference of local history.

Mr. Dunlap frequently used a camera on his assignments and his pictorial work won him a measure

(Continued from Page One)

of fame on the September day in 1901, which brought the assassination of President William McKinley. The President had visited this city in the forenoon of that day and Mr. Dunlap was the only newsman permitted to take pictures as the presidential party toured the state reservation.

He was developing these pictures in the afternoon when word reached him that the chief executive had been shot while attending Buffalo's Pan American exposition. While filing written accounts of the visit and the assassination to the New York Times, New York Tribune and other leading journals he sent prints of the pictures to points throughout the country and these appeared in print the following day.

Editor of News, Gazette

Mr. Dunlap was born February 4, 1861, the son of the late Jacob Dunlap and Matilda Brown Dunlap, in a home in South Main street on the site of the present Silberberg block. His parents came to this area from Albany, by way of the Erie canal, and for many years operated a grocery store in Whirlpool avenue, at that time the main thoroughfare of the Village of Suspension Bridge.

After a public school education he entered newspaper work and in 1890 became editor of the Niagara Falls Gazette. His services as a correspondent for the New York Times and New York Herald Tribune began in that period.

When the late Frank Dudley began his campaign for state senator, he founded the former Niagara Falls News and appointed Mr. Dunlap editor of this publication. The paper was printed and published in a plant in South [illegible]

Became Acheson Official

After serving [illegible] the News [illegible] five years Mr. Dunlap [illegible] to become an aide to Dr. Edward G. Acheson, the [illegible] and abrasive-graphite [illegible]. From 1910 to 1924 he was executive secretary and a director of the International Acheson Graphite Company.

As a newsman Mr. Dunlap covered the building of the international bridges over the Niagara [illegible] development and the many stunts which brought the eyes of the world on the cataracts.

He became a close friend of Mrs. Anne Edson Taylor, the first person to plunge over the cataracts in a barrel and live to tell the [illegible]. His account of Mrs. Taylor's feat was based on an exclusive personal interview with her a few hours after she was rescued from the lower river. When Mrs. Taylor died penniless a few years after her performance, Mr. Dunlap arranged for her burial in a plot at Oakwood [illegible].

Helped Develop Parks

Mrs. Taylor's grave is alongside that of Capt. Webb, the intrepid Englishman who was the first to swim the English channel but who lost his life in an attempt to [illegible] through the Niagara whirlpool rapids.

An ardent Republican, Mr. Dunlap gave his time and talents to the cause of free development of Niagara parks and roadways [illegible] might be "free to all mankind for ever."

During the Democratic administration of President Grover Cleveland and while the Dunlap home was located in Manchester street, that street's name was changed to Cleveland avenue.

Lord Kelvin, Thomas A. Edison and Nikola Tesla were among some of the famous [illegible] ed by Mr. Dunlap on [illegible] their visits here.

Mr. Dunlap was married in 1895 to Agnes Catherine Stevenson, St. Catharines, Ont. Mrs. Dunlap died in 1938. Surviving Mr. Dunlap are a daughter, Helen Agnes Dunlap, and two sons, Charles M. and Arthur S. Dunlap, this city, and a third son, Orrin E. Dunlap, Jr., New York City.

Funeral services will be held at 2 p.m. tomorrow at the Cornell and Daggett funeral home, with the Rev. Dr. Arthur H. Schnurer, Zion Evangelical Lutheran church, officiating. Interment will be in Oakwood cemetery.

Orrin Elmer Dunlap was the photographer for Niagara's premier postage stamp issued by
the USA May 1, 1901 featuring the Falls View Bridge with the American and Canadian
cataracts in the distant background. He was born in the Village of Suspension Bridge
February 4, 1861, just a short distance from the location of Niagara's first bridge
built in 1848. Near this site the Whirlpool (Rapids) Bridge was built in 1897, which
was also considered in 1900 for Niagara's first stamp. Today (1986) it is the oldest
auto-passenger span. The Falls View Bridge built in 1898 was destroyed by an ice jam
in 1938. Mr. Dunlap was the only person permitted to take pictures of President
William McKinley during the morning visit September 6, 1901 to the "Falls of Niagara
In the afternoon McKinley was shot at the Pan American Exposition in Buffalo, N.Y.
Previously he interviewed inventors Thomas Edison and Nikola Tesla during their visit
to the "Great Falls" with 100% waterflow. This was on the first power development of
Niagara that took place in 1896. Mr. Dunlap died June 13, 1953 and at the time was
oldest employee on the staff of the New York Times as Niagara correspondent. He started
in journalism as editor of the Niagara Falls Gazette in 1869. His feat was the first
view of the most photographed wonder of the world - the "Falls of Niagara" on a stamp.
Also it was meeting three famous persons, afterwards honored on U.S. stamps. HCF


FIRST U.S. AIRMAIL PILOT

Santa Barbara, Calif.
November 16, 1953

Dear Mr. Anderson:

Thank you for sending me the brochure, which I have read with interest. I recall that my husband, at different times, spoke of Nicola Tesla as one of the greatest electrical geniuses that ever lived.

I regrest to say that I do not understand much about electricity. I am therefore taking the liberty of passing on this literature you have sent me to one of my husband's oldest and best friends, Dr. Fred Strong, who has been interested in high frequency almost all of his life. I am asking him to write you.

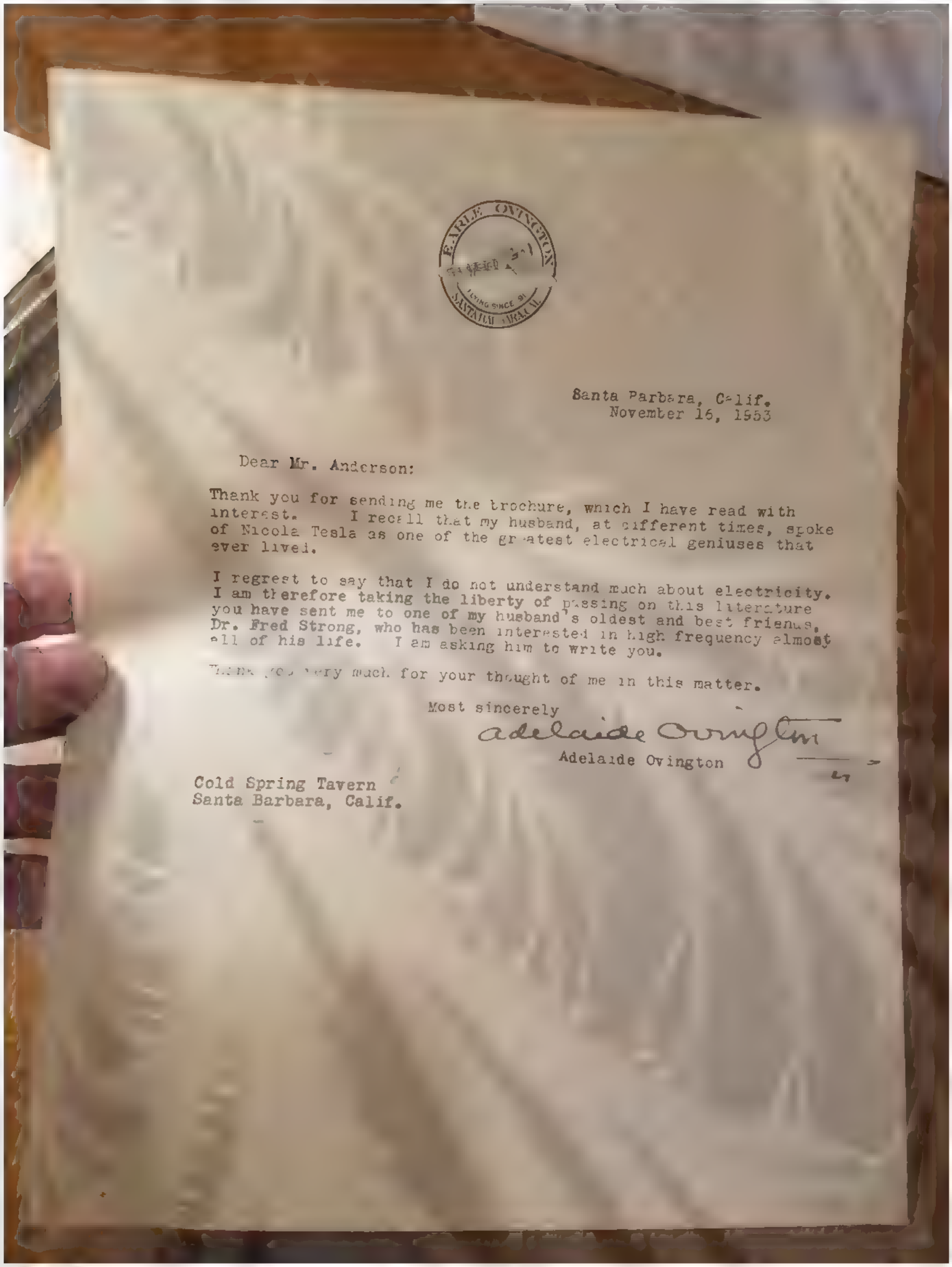
Thank you very much for your thought of me in this matter.

Most sincerely

Adelaide Ovington

Adelaide Ovington

Cold Spring Tavern
Santa Barbara, Calif.



EARLE OVINGTON

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Most sincerely

Adelaide Ovington

Adelaide Ovington

Cold Spring Tavern
Santa Barbara, Calif.

MORGAN GUARANTY TRUST COMPANY
OF NEW YORK
140 BROADWAY NEW YORK 15

ROBERT A. JONES
Vice President

New York July 7, 1961

Mr. Leland I. Anderson
1615 East River Terrace
Minneapolis 14, Minnesota

Dear Mr. Anderson:

In the absence of our President from his office, your letter of July 3 has been referred to me for reply. I note that you inquire regarding the possibility of there being among the records of the late Thomas Fortune Ryan information bearing on a certain operation by Nikola Tesla at Shoreham, Long Island, to which you state the late Mr. Ryan contributed.

So far as we know all archive records of the late Mr. Ryan which still exist are in our possession. An examination of our files pertaining to these records shows that they contain no information on the subject to which you refer.

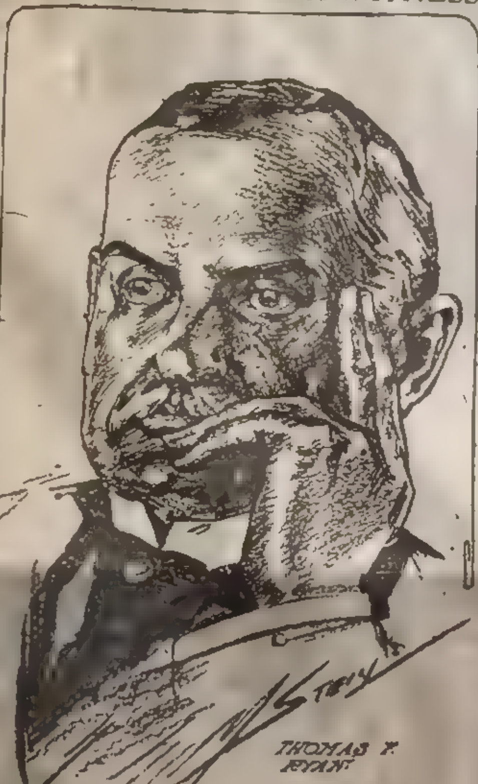
We regret our inability to be of assistance to you in this connection.

Yours sincerely,

Robert Jones

Robert A. Jones
Vice President

THOMAS F. RYAN IN COURT TESTIFYING AS A WITNESS.



RYAN IS ALL DAY ON THE STAND IN A $700 LAWSUIT.

He and Other Directors of the Metropolitan Are Sued by Two Holders of a Few Shares of Its Stock.

KEPT BY OFFICIAL LETTER FROM SELLING, THEY SAY.

Counsel Shout, Witness Shouts, and Very Little Testimony Is Given by Financier.

Thomas F. Ryan was an all-day witness yesterday in the Seventh District Municipal Court in a suit brought by Emanuel Weil and [illegible] Wettler to recover [illegible] and [illegible] from Mr Ryan, August Belmont, H. H. Vreeland and other directors of the Metropolitan Street Railway Company.

The plaintiffs, through Eugene Kramer and James L. Flake, alleged that as holders respectively of three and ten shares of Metropolitan Street Railway stock they were led in June, [illegible] and [illegible], into keeping their stock, instead of selling it for what they could get, by a circular letter from the Metropolitan Street Railway offices saying, in effect, that the corporation had assets worth [illegible]. The plaintiffs say the letter was inspired by Mr Ryan and the other directors.

De Lancey Nicoll appeared for Mr. Ryan personally and John B. Stanchfield for all the defendants.

Ryan's Testimony.

Mr Ryan was called by Kramer, who tried to find out how much control he now exercises in the Metropolitan system. Mr Ryan said he hadn't attended a directors' meeting since [illegible].

Mr Nicoll here declared that the case was an outrageous waste of public time and that he suspected the King committee was behind it and was sure 'Bill' Amory was.

[illegible]

Motion to Dismiss Denied.

[illegible]

CAPTURED, TELLS HOW HE ESCAPED FROM SING SING.

Lasala Says He Dropped Out of Line Returning from Mess and Hid in the Blacksmith Shop.

SCALED WALL WITH PLANK AND JUMPED INTO BOAT.

Recaught in Brooklyn After Long Chase—Had Dyed His Hair Vermilion.

After four days of freedom, part of which was spent in promenading around Police Headquarters in this city, Joseph Lasala, who escaped last Saturday night from Sing Sing prison, where he was serving fourteen years for highway robbery, was caught yesterday afternoon in Brooklyn by Mounted Policemen Thomas McLaughlin and Walter Mower. Lasala led his pursuers for several blocks across back fences and sheds before he was cornered in the rear of No. [illegible] Milford street.

Lasala surrendered only after the policemen used their sticks. He was taken to the Liberty avenue police station in the patrol wagon and, later by Lieut. Voorhies and several detectives, to the Brooklyn headquarters. He was locked in the Adams street station last night and will be taken back to Sing Sing this morning.

Tip as to Hiding Place.

The police received a tip yesterday that Lasala was hiding in the Italian settlement in East New York. They were told to be on the lookout for a man with violent red hair and smoked glasses, the disguise resorted to by the prisoner.

Policeman McLaughlin was on the front platform of a Bergen street car [illegible]

His Story of the Escape.

[illegible]

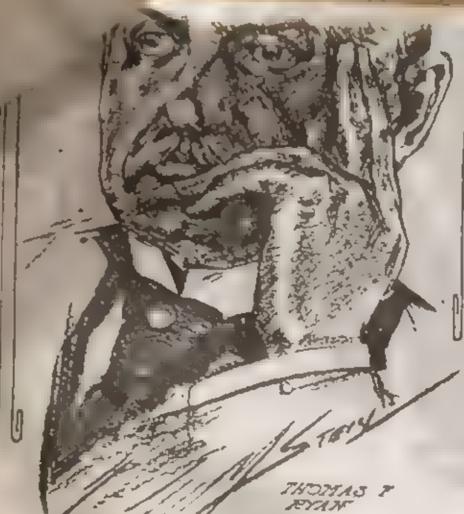
EX-WIFE AIDS NO. 2 TO GET A DIVORCE.

(Continued from First Page.)

[illegible]

Besieged for Hours.

[illegible]



THOMAS F RYAN

EX-WIFE AIDS NO. 2 TO GET A DIVORCE.

(Continued from First Page.)

Wormley No. 1 was charmed by Mrs. Wormley No. 2, became her strong friend, and volunteered to do all in her power to restore the domestic tranquillity of Mrs. Kathryn Wormley.

The latter was informed that her husband was much interested in a young woman who had been often seen with James G. Blaine jr. Another admirer of the young women was an elderly banker who usually called at her home between 10 A. M. and 3 P. M. Wormley was said to have timed his calls so that they did not conflict with the banker's. Friends of Mrs. Wormley No. 1 declined yesterday to verify the report that she supplied information concerning the much-sought for young lady to Mrs. Kathryn Wormley.

Informed the Banker.

The latter, so gossip among mutual friends has it, stationed herself near the young lady's home, attracted the elderly banker's attention and informed him that others beside himself basked in the smiles of the fair charmer. The banker thanked his informant, engaged detectives, and soon discontinued his visits.

Following this incident Mrs. Kathryn Wormley undertook a little detective work on her own behalf. She said at the time that she had searched for her husband for a year but had been unable to trace him. The first clue was obtained by following a messenger who left Mr. Wormley's office bearing books relating to the business, and went to the Hotel Rand on West Forty-ninth street, where it was subsequently learned that Wormley was.

Mrs. Wormley had instructed her counsel to prepare papers in a divorce action. Armed with the papers and accompanied by the lawyer and a detective, Mrs. Wormley went to the hotel one day late in February 1907 and waited at the door to serve the papers when her husband appeared. She said she was taking no chances of himself escaping [illegible]

Wormley had received word of the watchers at the door at 11 A. M. He replied to the summons of his wife to come down that he enjoyed better the quiet of his room on the sixth floor. Mrs. Wormley, her lawyer and the detective went upstairs, and Mrs. Wormley cried:

"Come out like a man and accept the service of the papers."

Besieged for Hours.

There was no reply, but the watchers heard the tinkle of the telephone bell and Wormley's voice trying to get a communication with his counsel. Several hours passed and Wormley was getting hungry. He was heard to order luncheon and a basket packed with food was lowered from a seventh story window to the window of his room. The siege was raised following the arrival of Alexander C. Young, Wormley's counsel, who produced his client without delay.

Mrs. Wormley said at the time that the party went to Yorkville Court where she charged her husband with non-support and desertion and he agreed to pay her $10 a week.

Mrs. Wormley has apartments at No. 8 East Thirty-second street. She declined yesterday to receive callers or discuss in any respect the pending suit.

KILLS MOTHER AS HE DREAMED HE WOULD.

(Continued from First Page.)

I wouldn't live at home but stayed ... my sister and her husband until the ... [illegible]

KEPT BY OFFICIAL LETTER FROM SELLING, THEY SAY.

Counsel Shout, Witness Shouts, and Very Little Testimony Is Given by Financier.

Thomas F. Ryan was an all-day witness yesterday in the Seventh District Municipal Court in a suit brought by Emanuel Weil and Minnie Weiller to recover $600 and $300 from Mr. Ryan, August Belmont, H. H. Vreeland and other directors of the Metropolitan Street Railway Company.

The plaintiffs, through Eugene Kremer and James L. Pinks, alleged that as holders respectively of three and ten shares of Metropolitan Street Railway stock they were led in June, 1905 and 1906, into keeping their stock, instead of selling it for what they could get, by a circular letter from the Metropolitan Street Railway offices saying, in effect, that the corporation had assets worth $50,000,000. The plaintiffs say the letter was inspired by Mr. Ryan and the other directors.

De Lancey Nicoll appeared for Mr. Ryan personally and John B. Stanchfield for all the defendants.

Ryan's Testimony.

Mr. Ryan was called by Kremer, who tried to find out how much control he now exercises in the Metropolitan system. Mr. Ryan said he hadn't attended a directors' meeting since 1903.

Mr. Nicoll here declared that the case was an outrageous waste of public time and that he suspected the King committee was behind it and was sure that Amory was.

Mr. Ryan couldn't remember that at a meeting in 1903 he had talked with August Belmont about the value of corporation properties.

"Belmont has testified in this case that you were the only person to whom he talked," urged Mr. Kremer.

"I can't help what Belmont testified to," replied Mr. Ryan warmly.

Kremer then wanted to know a few things about Mr. Ryan's influence over Metropolitan directors and stockholders, at which Mr. Ryan shouted that he wasn't giving up private information for Kremer's future use.

In reply to a question about some reports to the Railroad Commissioners, he said he was prepared to sit in the witness chair a month if necessary.

"This case is being tried in public and I am entitled to tell you all about those reports," he said.

"You will have abundant opportunity," began Mr. Kremer.

Motion to Dismiss Denied.

After an adjournment for lunch Mr. Stanchfield declared the suit in reality put his clients on trial for conspiracy and was being tried in the wrong court. He moved to dismiss it. He shouted, Kremer shouted and Nicoll shouted. When the shouting died away Justice Young denied the motion.

Replying to questions Mr. Ryan said he knew nothing about managing railroads, only financing them. In 1902, Mr. Ryan said, the Metropolitan Company took over all the obligations of the various companies it absorbed. The total debt was $11,000,000.

"I carried half of it," Mr. Ryan said, "and two banks carried the other half."

"Through Kuhn, Loeb & Co.?"

"Yes."

Mr. Ryan admitted that he had received the money back after the formation of the Metropolitan Securities Company.

Between valuable franchises and other property the value of the Metropolitan in 1900 was fully $60,000,000, Ryan said.

Mr. Ryan's examination will continue to-day.

NEW MYSTERY IN POLICEMAN'S DEATH.

Dr. T. M. Achen Says Bresnahan Also Had a Bullet in His Head.

Following the death yesterday of Patrolman John Bresnahan at Roosevelt Hospital comes a statement from Dr. T. M. Achen of No. 400 West Fiftieth street which adds mystery to ... circumstances under which Bres- [illegible]

SCALED WALL WITH PLANK AND JUMPED INTO BOAT.

Recaught in Brooklyn After Long Chase—Had Dyed His Hair Vermilion.

After four days of freedom, part of which was spent in promenading around Police Headquarters in this city, Joseph Lassis, who escaped last Saturday night from Sing Sing prison, where he was serving fourteen years for highway robbery, was caught yesterday afternoon in Brooklyn by Mounted Policemen Thomas McLaughlin and Walter Howey. Lassis led his pursuers for several blocks across back fences and sheds before he was cornered in the rear of No. 154 Milford street.

Lassis surrendered only after the policemen used their clubs. He was taken to the Liberty avenue police station in the patrol wagon and, later, by Lieut. Vorhies and several detectives, to the Brooklyn headquarters. He was locked in the Adams street station last night and will be taken back to Sing Sing this morning.

Tip as to Hiding Place.

The police received a tip yesterday that Lassis was hiding in the Italian settlement in East New York. They were told to be on the lookout for a man with violent red hair and smoked glasses, the disguise resorted to by the prisoner.

Policeman McLaughlin was on the front platform of a Bergen street car bound for Woodhaven when a man jumped on the car at Liberty avenue and shouted:

"There's the man that escaped from Sing Sing standing on the corner!"

McLaughlin and Policeman Howey then cornered the fugitive after a long chase.

Lassis's story of how he escaped from the prison coincides with that published in The World on Tuesday. He said:

His Story of the Escape.

"Saturday night, returning from mess, I dropped out of the line and slipped into the blacksmith shop, where I was employed. I put on one of the instructor's suits and obtained a knife which I had hidden there. I waited till it was dark and then I got a plank and placed it against the east wall. I climbed up the plank and dropped down outside the wall.

"I ran for quite a distance along the river front until I found a rowboat. I cut the rope and jumped in. There were no oars and I drifted down to Tarrytown, from which place I took the train for New York on Sunday morning. I went to No. 229 East One Hundred and Twenty-fifth street and remained there until to-day, when I came over to Brooklyn to see some friends. I wanted to get enough money to take me to Chicago. I intended to go there to-night."

"Is it true that you went back to the prison after your hat?" he was asked.

"I started back Sunday," he replied, "and I changed my mind. The hat didn't look good on me, anyway."

His Vermilion Hair.

A letter addressed to Lassis's wife, at No. 97 East Houston street, told of his intention to go to Chicago if he could get enough money. Lassis was one of the most grotesque looking prisoners that ever graced a Brooklyn police station. The vermilion veneer he applied to his black hair is in striking contrast to his swarthy complexion and black eyes. The detectives think he used ordinary house paint to effect the transformation. The fact that he obtained a change of clothing and money to buy a railroad ticket at Tarrytown is proof that he had friends waiting for him outside the prison.

When Lassis learned that Warden Frost was coming down to bring him back to Sing Sing he laughed. As a penalty for escaping he will forfeit any allowance for good behavior and will serve the full term.

$6,500 FOR GIRL'S DEATH.

Mrs. Merritt's Daughter Victim of Brewster Express Wreck.

ESTATE OF VINCENT ASTOR
405 PARK AVENUE
NEW YORK 22 N.Y.
[illegible]

July 19, 1961

Mr. Leland I. Anderson
1615 East River Terrace
Minneapolis 14, Minnesota

Dear Mr. Anderson:

Your letter of July 3rd to Mr. Lockwood has been referred to me.

I am sorry to tell you that the brochure you are seeking is not in our possession.

Very truly yours,

[illegible]

Tesla - Finances - Col. Astor's stock in Tesla Co.

N.Y. Times, June 22, 1913

Appraisement of Estate Reveals Astor's Personality.

"Hidden away, too, in the list of stocks and bonds of the appraiser's report is another indication of Mr. Astor's enthusiasm in matters scientific. The item enumerates 500 shar s of stock in the Nikola Tesla Co., of "nominal" value. Commenting on this investment, Nicholas Biddle, who was closely associated with Col Astor in his business affairs, had this to say: 'This stock was not carried on Col Astor's books. It was purchased by him under an agreement with Mr. Tesla personally, of which his office had no information. The stock has never paid any dividends and ---proceeds from sales of stock were used in experimental work which has not developed into a paying industry... and in my judgment it would be impossible to sell this stock."

TRAVEL

Summer place of rich is a historic gold mine

NEWPORT, R.I.

H.O. Havemeyer was one of the world's leading art collectors.

His collection of 2,000 works is now housed in the Metropolitan Musum of Art, New York City.

Mr. Leland I. Anderson
[illegible] East River Terrace
Minneapolis 14, Minnesota

Dear Mr. Anderson:

I have yours of the first instant concerning [illegible] brochure on Nikola Tesla. I have no knowledge of the existence of such brochure. He was a frequent visitor at [illegible] mother's, the late Mrs. Theodore Havemeyer's, residence at [illegible] Madison Avenue, New York. On one occasion I [illegible] her to his laboratory where he demonstrated his invention.

As I recall, the late John Jacob Astor, it was said at the time had contributed heavily toward [illegible] invention. It is unfortunate you waited so long to inquire [illegible] ing Tesla as his son, the late Vincent Astor, who died only last autumn could have possibly furnished you with information concerning his father's interest in [illegible] inventions. It might be well to follow this lead by writing his executors.

I will tell you an interesting incident concerning Tesla. When I was married in July 1900, he sent a special messenger all the way to me at Newport, Rhode Island, with a Capuchin Sapphire ring.

Trusting I have given you some lead in your search, believe me,

Most sincerely,

ALBERT J. PHILLIPS
620 BOWSPRIT LANE
XXXXXXXXXXXXXXXXXXXXXXXX
Longboat Key, Fl.33548
February 10, 1979

Ms. Margaret Cheney
3354 San Juan Canyon Road
San Juan Bautista, Ca. 95045

Dear Ms. Cheney:

Your letter of January 15th arrived while I was in South America, hence the delay in replying to it. I recall quite clearly meeting with Dr. Tesla and working with him on his process for degasifying copper in the period 1932-1933 I would guess.

Dr. Tesla, who at that time was, of course, well established as a great scientist, came to the American Smelting and Refining Co. with the concept that gas bubbles dispersed in a liquid were under pressure much high than those computed by the accepted theories and he believed that gas bubbles, say of air or nitrogen, if small enough, would have the same density as copper in the liquid form and that these bubbles did indeed exist in liquid copper and that if they could be removed, copper of superlative properties would be produced.

Dr. Tesla's eminence won for him the financial support of Asarco's New York officials and I as Superintend of the Central Research Department, was delegated to perform such experiments as Dr. Tesla directed within certain financial limits. Dr. Tesla appeared at our Laboratories in Perth Amboy, N. J. with complete drawings of an apparatus that he wished to have built to be used to prove his theories. It became apparent immediately that, while Dr. Tesla was a brilliant electrical scientist, he knew very little about metallurgy. I immediately informed him that the apparatus he had so carefully designed would not melt copper and could not possibly subject liquid copper to bombardment under vacuum to remove the hypothetical gas bubbles from it. I also told Dr. Tesla that there was plenty of evidence to prove that these hypothetical gas bubbles could not exist in molten copper to any great extent. Dr. Tesla and I discussed our differences of opinion in a friendly and scientific manner but he was not swayed from his beliefs by my objections and we proceeded to build his apparatus exactly as he designed it.

As predicted, the apparatus ~~thexapparatus~~ would not even begin to melt copper and after several weeks of attempting to use the equipment with minor modifications that Dr. Tesla requested a basic change was made permitting liquid copper melted elsewhere, to be poured into the equipment and subjecting the stream of copper going through the apparatus to high vacuum and bombardment against a "Lava" target before it issued from the bottom into a mold. We finally obtained several samples of copper through the machine which instead of being densified were quite gassy and were in no

ALBERT J. PHILLIPS
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~~XXXXXXXXXXXXXXXXXXXXXX~~
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way different from copper that had not been subjected to the Tesla treatment.

Since the funds appropriated for the research had been badly over run, after about a years work the experiments were discontinued and Dr/.Tesla and I parted still the best of friends.

Dr. Tesla was a fine distinguished gentleman whom I liked very much. He was probably the worlds greatest electrical theorist of the time. However, he was not a metallurgist and failed to realize that there was a great deal known about metals that he did not know. His experiments in the field of copper metallurgy were poorly planned and completely unsuccessful. Never-the-less, I learned a great deal from my association with him and recall fond memories of his idiosyncrasies. He would arrive at our Laboratories in Perth Amboy from the Hotel McAlpin in New York City where he lived at the time, in a chauffer driven splendid limousine. He usually wore a frock coat, grey striped trousers, grey spats, and a cane with a gold knob. He once showed me a photograph of a caneled check for one million dollars, if I remember correctly, that he had received from the Westinghouse Electric Co. for one of his patents or inventions.

Itrust that these recollections will be of some use to you and I will look forward to reading your biography of Dr. Tesla when it appears in the future.

Very truly yours,

Albert J. Phillips

PS. I now note from your letter of the 15th of January that you would like to know the financial details of Dr. Tesla's contract. These were all handled by our New York office (with which I had only the most remote contact at the time) but my recollection is that $25,000- was initially approved for the experiments (in 1933 that was a lot of money and hard to come by) and after the first unsuccessful experiments the appropriation was extended possibly by another $25,000-. What rights Asarco was to have to any process developed I do not recall but this was formally spelled out in a contract I am sure.

AJP.

23 Quaker Path, Box BX
Stony Brook, N.Y. 11790
December 11.1968

Mr. Leland I. Anderson
1709 Claridge Avenue West
St. Paul, Minnesota 55113

Dear Mr. Anderson:

As Bob Morris mentioned to you, I staid at the New Yorker hotel part of the time for several years. Occasionally, I saw Nikola Tesla there in the lobby of the hotel, but I never had an opportunity to talk to him and did not correspond with him.

On his birthday, Tesla used to outline some of his predictions to the hotel bellboys. I recall that one of the bellboys told me that Tesla said that he had invented an energy ray that would instantly disintegrate a battleship at a considerable distance !

Mrs. Dwyer of Wading River inter[illegible] me recently in connection with [illegible] for the Long Island Forum on [illegible] Island". Knowing of my interest in Tesla, [illegible] of your story "Wardenclyffe, A Forfeited [illegible] with great interest. It contained consid[illegible] that I had not previously known.

I first visited Tesla's [illegible] Shoreham about 1920. At that time, there were [illegible] equipment still there, such as "Tesla Coils".

Tesla made many important contributio[illegible] to the electric industry, such as the induction motor and [illegible] a tern ting current power distribution system now in univ[illegible] use. However, he was way ahead of [illegible] transmit power by wireless. Someday it should be possible to transmit appreciable [illegible]ounts of [illegible] over moderate di[illegible] by microwave or laser beams.

Many thanks for sending me a reprint of your Tesla story. Your proposed book should be very interestin[illegible] and I regret that I do not have any information about Tesla that would be helpful to you.

Sincerely yours,

H H Beverage

H.H.Beverage

HAROLD H. BEVERAGE
23 Quaker Path, P.O. Box 6X
Stony Brook New York 1179

Mr. Leland I. Anderson
1709 Eldridge Avenue West
St. Paul, Minnesota 55113

Nov 16, 1968

COPY

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talk at the Smithsonian
annual conference of
Association, on the
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Robert M.
told me that you
you both kind
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to learn if
ed any
from

Sincerely yours,

Leland Anderson

Encl. FORUM article

Nov 16, 1968

COPY

In connection with Nikola Tesla have you ever talked with Harold Beveridge of Riverhead L I

He knew Tesla quite well when they both lived in the Hotel New Yorker.

* RCA Pioneer!

ridge
N.Y.

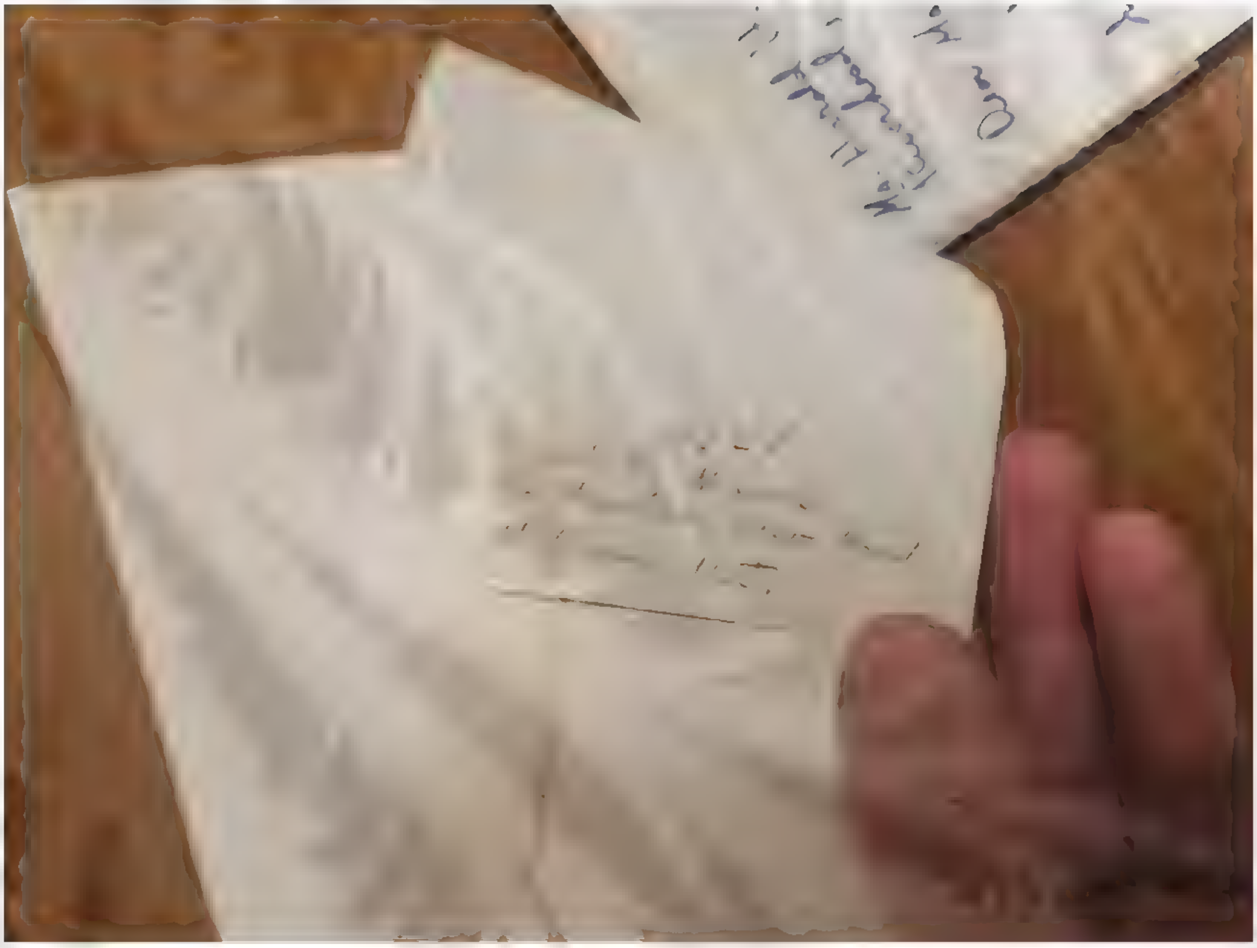
[illegible] a talk at the Smithsonian [illegible] annual conference of [illegible] ders Association, on the [illegible] tributions to radio [illegible] Robert M. [illegible] told me that you [illegible] well [illegible] you both lived at the Hotel New Yorker.

I would be [illegible] whether you ever [illegible] correspondence, technical information, [illegible] know of [illegible].

Sincerely yours,

[illegible]

Encl. FORUM article



Nov 16, 1968

COPY

Mr. Harold H. Beveridge
Riverhead, L.I., N.Y.

Dear Mr. Beveridge

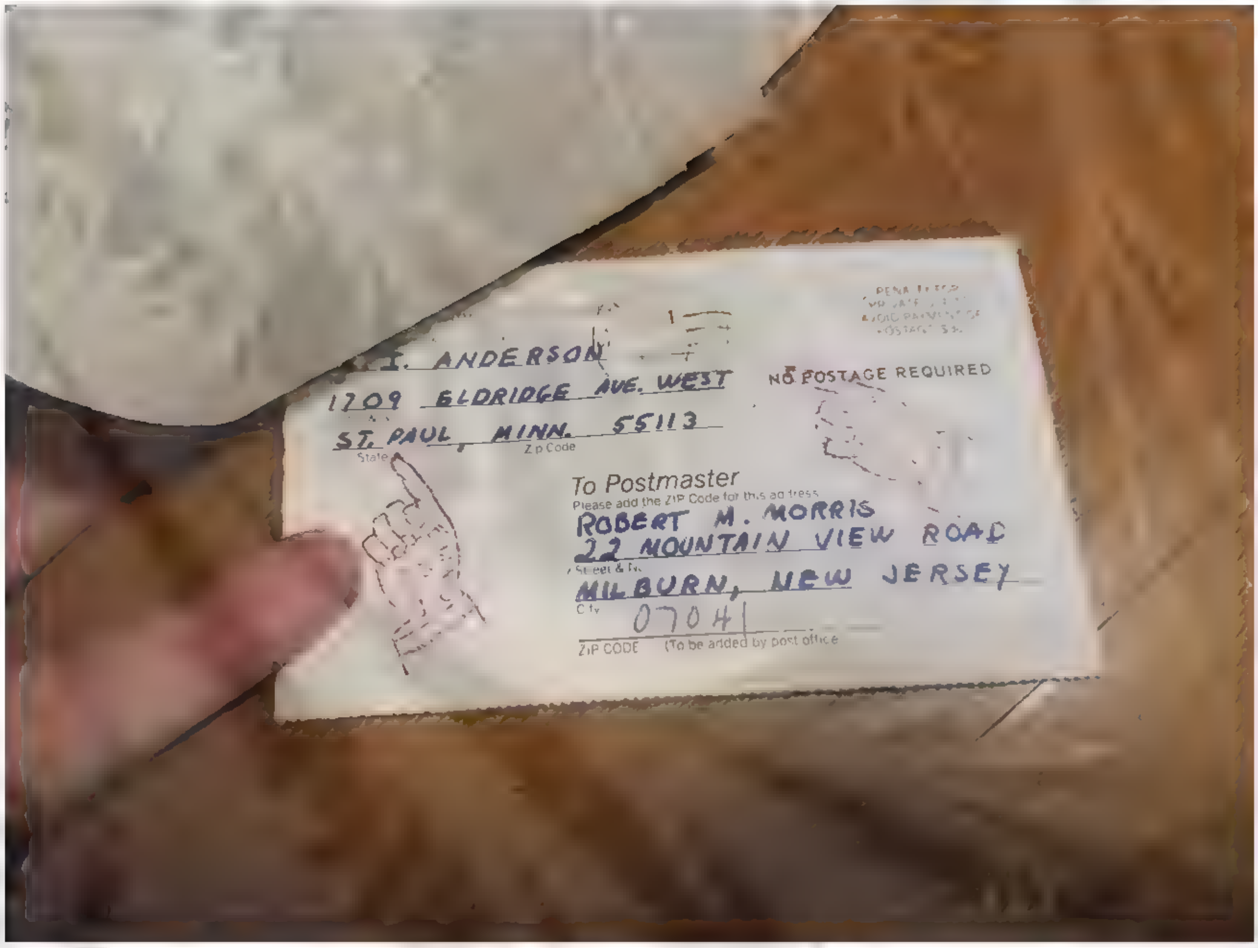
I recently gave a talk at the Smithsonian Institution, before the annual conference of the Antique Wireless Association, on the subject of Tesla's contributions to radio technology. ~~[illegible]~~ Member Robert M. Morris ~~[illegible]~~ later told me that you knew Tesla quite [illegible] [illegible] you [illegible] lived at the Hotel New Yorker.

I would be interested to know if you whether you ever received any [illegible] correspondence, technical information, etc. [illegible] [illegible] know of those [illegible] have.

[illegible] yours,

[illegible signature]

Encl. FORUM article



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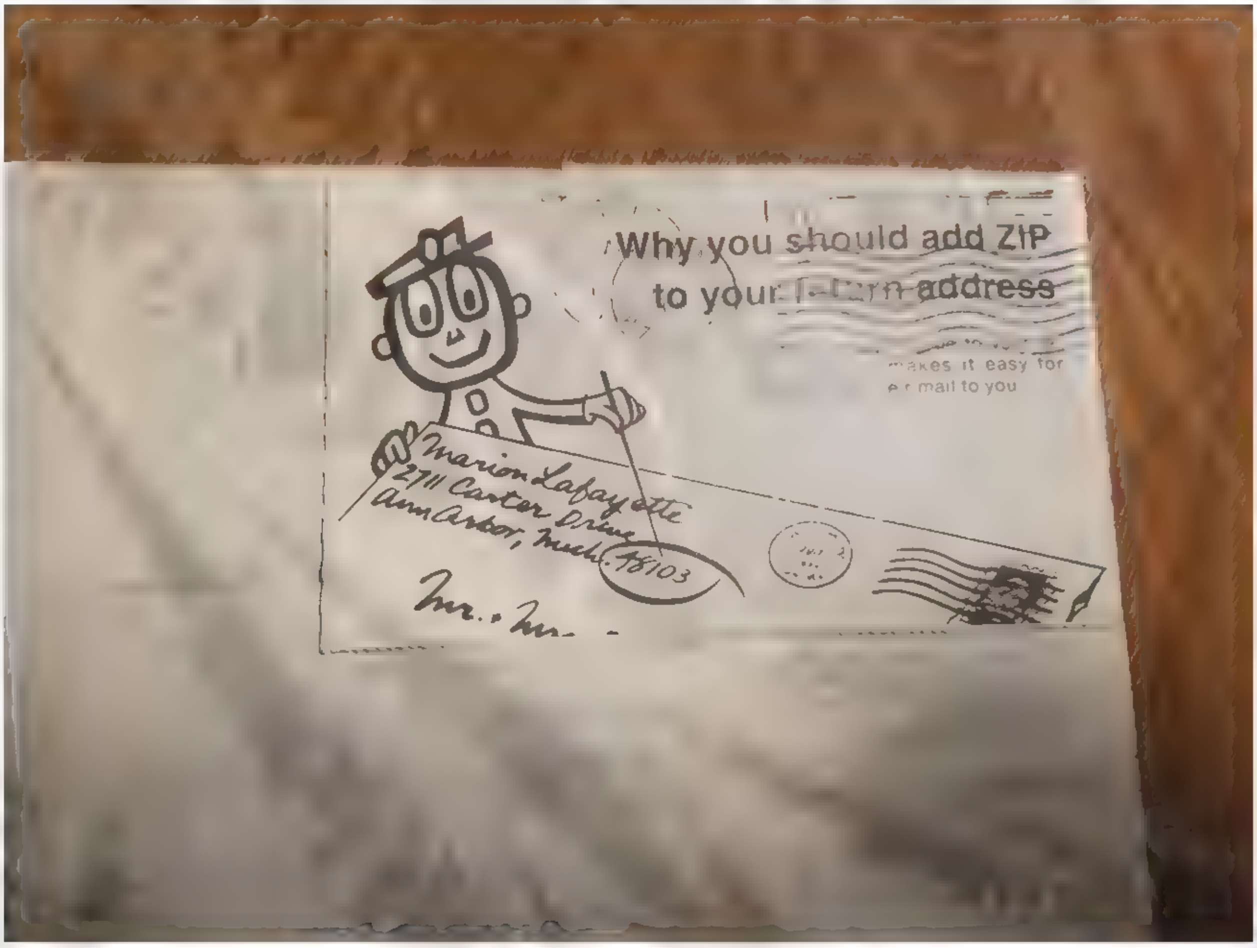


Why you should add ZIP
Marion Lafayette
2711 Carter Drive
Ann Arbor, Mich. 48103
Mr. . Mr.

THE J. G. WHITE ENGINEERING CORPORATION
ENGINEERS AND CONSTRUCTORS
60 BROAD STREET
NEW YORK 4

CABLE ADDRESS
WHITENGECO NEW YORK

July 29, 1953

Mr. Leland I. Anderson
1[illegible]7 Seymour Avenue Southeast
Minneapolis 14, Minnesota

Dear Mr. Anderson:

Your letter of July 16 re Dr. Nikola Tesla is received and I regret to advise you that Mr. Gano Dunn, to whom your letter was addressed, died on April [illegible] of this year.

Sincerely yours,

(Mrs) J. N. Clarke
J. [illegible] Clarke

Mr. Dunn assisted Tesla in his 1891 lecture on alternating currents of high frequency and high potential delivered before the American Institute of Electrical Engineers at Columbia College, New York

IRE People

Gano Dunn (F'15 [illegible] 50) internationally known engineer and builder and president of the J. G. White Engineering Corporation of New York City, [illegible]

Gano Dunn

Mr. Dunn was born in New York City on October 18, 1870. He received the B.S. [illegible] New York [illegible] 889 [illegible] from [illegible] first [illegible] awarded [illegible] States. He later [illegible] and held a [illegible] radio operator's license.

Following graduation, Mr. Dunn joined the Crocker-Wheeler Company [illegible] assisted in the design of [illegible] generators, transformers and other electrical apparatus. He subsequently [illegible] president and a director [illegible]

Mr. Dunn became associated with the J. G. White Engineering Corporation [illegible] 1911 as vice president [illegible] charge [illegible] engineering and construction [illegible] president from 1913 [illegible] outstanding construction [illegible] projects [illegible] which were [illegible] Government [illegible] stations [illegible] buildings, [illegible] roads, bridges, [illegible] America.

Mr. [illegible] the [illegible] America in 1938. He [illegible] also [illegible] director [illegible] and the National Broadcasting Company. [illegible] of [illegible] was [illegible] the trustee [illegible] per [illegible] the Advancement of Science and Art. He [illegible] Visiting Committee of Harvard Engineering School, [illegible] president [illegible] the American Institute of Electrical Engineers.

Mr. Dunn [illegible] or delegate [illegible] committee and [illegible] commission [illegible] the Science Advisory [illegible] President [illegible] the [illegible] to him. He [illegible] the Smithsonian Institution [illegible] the Massachusetts Institute of Technology.

[illegible] the awards presented to Mr. Dunn [illegible] the [illegible] Medal [illegible] the College of the City of New York, the Thomas A. Edison Medal of the American Institute of Electrical Engineers, the Egleston Medal of Columbia University, Hoover Medal of the National Engineering Societies, Modern Pioneer Award of the National Association of Manufacturers, and the Peter Cooper Medal of the Cooper Union.

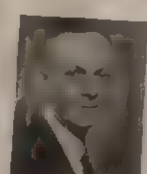
Honorary degrees of Mr. Dunn include the D.Sc. from Columbia, Rutgers, Lehigh, and New York [illegible] the College of the City of New York, and the LL.D. degree from Brown [illegible] College [illegible]

Mr. Dunn [illegible] United States [illegible] the Institute of Electrical Engineers [illegible] president of the Pan-American Society.

Mr. Dunn was a fellow of the Royal Microscopy Society and the New York Academy of Sciences, and a member of the American Society of Civil Engineers, American Society of Mechanical Engineers, American Academy of Arts and Sciences, American Philosophical Society, Optical Society of America, New York Historical Society, and [illegible] New York Zoological Society, Phi Beta Kappa, Sigma Xi, Tau Beta Pi, and Delta Kappa Epsilon.

❖

George F. Maedel (M'43 SM'43) formerly vice president and general superintendent of the RCA Institutes, has been elevated to the presidency of the Institutes.



George F. Maedel

Mr. G. F. Maedel joined RCA Institutes in 1933 as the first instructor of the mathematics department. He transferred to the radio frequency department in 1936, where he became chief instructor. [illegible] 1940 Mr. Maedel was appointed assistant superintendent of the Institutes [illegible] 1944 and became superintendent in 194[illegible]. The next year he was [illegible] to his former position as vice president and general superintendent.

A native of Brooklyn, Mr. Maedel was born there [illegible] 21, 1903. He received the A.B. degree [illegible] and the [illegible] degree in 19[illegible] from Columbia University.

Mr. Maedel [illegible] career with the New York Edison Company, where he worked [illegible] planning [illegible] for [illegible] year following [illegible] He [illegible] the New York Telephone Company in 192[illegible] to do traffic engineering. From 1931–1933 he headed the [illegible] Products [illegible] Company, where he was concerned with installing public [illegible] systems.

Mr. Maedel is a [illegible] professional engineer in the state of New York.

Paul N. Bergquist (M'48) broadcast consultant, has been appointed field sales representative for broadcast equipment for the RCA Victor Division of the Radio Corporation of America.

Mr. Bergquist was born in Spokane, Wash., on October 8, 1919. He received the B.S. degree in electrical engineering from State College, Pullman, Wash., in 1942. During his college years he was a radio operator for various [illegible] tions.

[illegible] U.S. Navy as a radar officer and attended radar school at Harvard University [illegible] responsible for the [illegible] ing in and maintenance of radar of nineteen Naval Air stations.

After separating from the service in 1946, Mr. Bergquist became a radio engineer with Glen D. Gillett and Associates, later a partner of Gillett and Bergquist.

❖

Major William S. Dawson (A'49) has assumed command of the 1300th Student Squadron of the Air Resupply and Communications Service, Mountain Home Air Force Base, Idaho.

Major Dawson [illegible] returned from Japan, where he was Director of Plans [illegible] Requirements for 1808th Airways and Air Communications Service Wing. He [illegible] [illegible] throughout the [illegible] He had been Deputy Director [illegible] that position was created.

During the past sixteen years Major Dawson has served in military aviation in meteorological and communications assignments such as commanding officer of an AACS Squadron and at the Headquarters of the [illegible] Army Air Corps.

Major Dawson is a member of the American Geophysical Union, American Institute of Physics, American Meteorological Society, American Association for the Advancement of Science, and the Institute of Aeronautical Sciences.

❖

J. Walton Colvin (M'5[illegible]) has been appointed manager of [illegible] sales for the Communication Division of Bendix Radio.

Mr. Colvin joined Bendix in 1942 as a [illegible] He [illegible] became technical advisor to the Mediterranean Headquarters of the Air Force from 1944–46, aviation service engineer, and [illegible] sales engineer. Since 1948 he has been merchandising manager dealing in Air Force sales.

A native of Somerset, [illegible] Mr. Colvin was born on December 30, 19[illegible]. He is a graduate of the National Radio Institute of Washington, D. C. and Northwestern Institute, Ames, Iowa.

Prior to his association with Bendix Mr. Colvin operated his own radio, electrical sales, and service business.

[illegible]ation with Bell Telephone Laboratories [illegible] began in 1928, at which time he was engaged in electromagnetic design. In 1938 [illegible] put in charge of the machine switching laboratory. During World War II he was concerned with the development and manufacture of radar and sonar equipment for use [illegible] returned to machine switching and in 1949 became science editor of the *Bell Laboratories Record*. Active in the affairs of the Institute, Dr. Fabo was [illegible] New York Section (1950–51); chairman [illegible] and Electronics Co-ordinating Committee (1948–49), and Science and Electronics [illegible] Mr. [illegible]

Dr. Dunn with a doctor of laws degree. Dr. Dunn was a fellow of the Institute of Radio Engineers, the Royal Microscopy Society, and the New York Academy of Sciences. He was honorary secretary for the United [illegible] American Society of Civil Engineers, The American Society of Mechanical Engineers, Optical Society of America, American Academy of Arts and Sciences, American Philosophical Society [illegible] He was [illegible] Phi Beta Kappa and [illegible]

OBITUARY . . . . . .

Gano Dunn (AM '91, M '94, F '12, HM '45, Member for Life), president, J. G. White Engineering Corporation, New York, N. Y., and a former president of the AIEE, died April [illegible] 1953. Dr. Dunn was born in New York, N. Y., October 18, [illegible]. He received a bachelor of science degree [illegible] College of the City of New York in 188[illegible] and [illegible] years [illegible] the distinction of [illegible] from Columbia University the first degree in electrical engineering awarded in the United States. After several years in the communi[illegible] engineering field, Dr. [illegible] J. G. White Engineering Corporation, New York, N. Y. in 1911 as vice-president in charge of engineering and [illegible]. Two years later he was elected to the presidency of the company and the corporation became one of the most prominent construction firms in the world. [illegible] constructed were the United States Naval Oil Base at Pearl Harbor, the steam plant at Muscle Shoals, Ala., [illegible] stations [illegible] Government [illegible] at Langley Field, Va., and the first long-distance natural gas pipe line in California, as well as completing [illegible] roads [illegible] and irrigation in Latin America. Dr. Dunn was elected to the board of directors of the Radio Corporation of America in 1938. He was chairman of [illegible] trustees and former president of Cooper Union for the Advancement of Science and Art. He was a trustee of Barnard College [illegible] of Harvard [illegible] He was a member of [illegible] President Roosevelt's Science Advisory Board. Among the many awards presented to Dr. Dunn were the Townsend Harris Medal [illegible] College of the City of New York, the Thomas A. Edison Medal of the AIEE [illegible] the [illegible] Medal of Columbia University, the Hoover Medal [illegible] 1939 [illegible] the [illegible] Medal [illegible] Dr. Dunn [illegible] Columbia University [illegible] New York University [illegible] Bowdoin College [illegible]

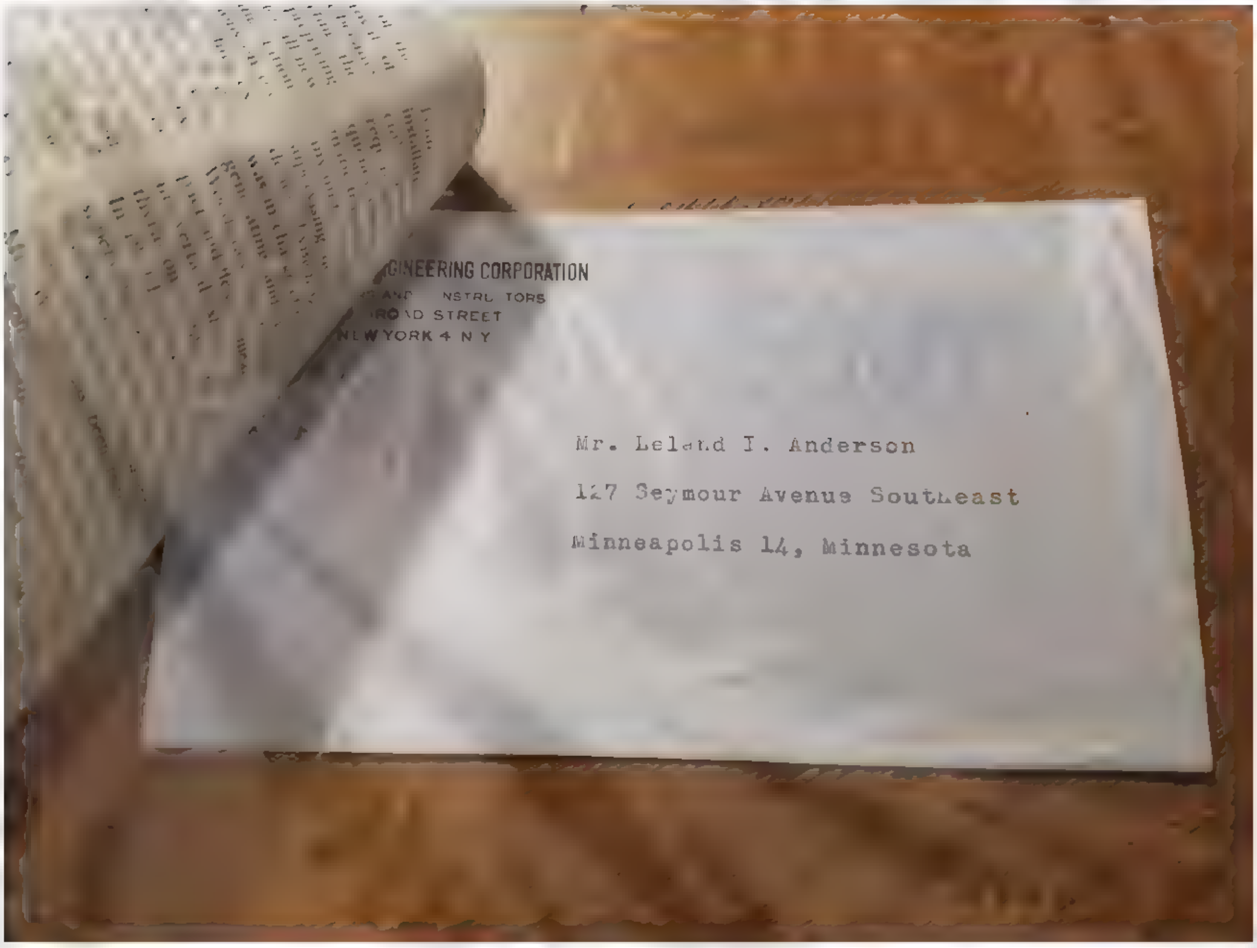
Gano Dunn

of the AIEE, Dr. Dunn had served as president (1911–12), vice-president (1900–02, 1905–07), and manager (1897–1900, 1902–05), and on the following Institute committees: Code of Principles of Professional Conduct (1914–19); Iron and Steel Industry (1914–16); Public Policy (1914–17, 1920–30, Chairman 1925–27); Edison Medal ([illegible] 1932 [illegible], Chairman 1924–27); Education (1925–26); Hoover Medal Board of Award (1931–39); and many other committees in co-operation with other engineering societies. The Council of the Institution of Electrical Engineers, through its secretary, Mr. W. K. Brasher, has expressed its deep regret on the passing of Dr. Dunn in the following letter from Mr. Brasher to Mr. R. H. Barclay of the J. G. White Engineering Corporation: "He was of course, known personally to several members of the Council and those who had not had the privilege of meeting him knew of his outstanding work not only for The Institution but also in the cause of Anglo-American friendship. He was known to many members of The Institution, a substantial number of whom have reason to be thankful to him for the advice and help he so readily gave them when, strangers as they were in a new country, they turned to him for guidance. The Council feels that it would be difficult to find anyone with qualities so ideally suited to the [illegible] that his passing leaves a gap which it will be difficult for them to fill. [illegible] greatly [illegible] a message [illegible] Dunn [illegible] to his [illegible] the AIEE

Per Engelbert Erikson (M '[illegible]) retired, [illegible] died De[illegible] 195[illegible]. Mr. Erikson was born in [illegible] September 28, 1880, and received the degree of electrical engineer [illegible] Institute of Technology [illegible] He then joined the Western Electric Company, New York, N. Y., to do developmental work on loading coils and balanced toll cables. He was transferred to [illegible] England, in 1909 as European transmission engineer. He had charge of the systems planning of the first loaded long-distance cable installed in Europe [illegible] and Birmingham, England. In 1916 he returned to New York City [illegible] supervised the reconstruction of the telephone transmission line between Rio de Janeiro and São Paulo, Brazil, the first in Brazil to be equipped with repeaters and and loaded toll entrance cables. Mr. Erikson returned to London in 1919 to what was then the International Western Electric Company and was to become the International Standard Electric Corporation in 1925. In 1928 he became assistant vice-president [illegible] he was [illegible] In 1934 Mr. Erikson was transferred to Sweden as liaison officer between New York and allied companies in Scandinavia. He returned to London in 194[illegible] as technical adviser to the European commercial department. From 1938 to his retirement in 1950, Mr. Erikson served as a director of A. B. Standard Radiofabrik of Stockholm, Sweden [illegible] he was active [illegible] International Consultative Committee on Telephony. Since [illegible] as a delegate for the operating companies [illegible] coming secretary in 1934. He was a member of the Institution of Electrical Engineers, Great Britain, and the Svenska Teknologföreningen.

Harry Lepper Kirker (A[illegible], M [illegible], F '13, Member for Life) [illegible] 1953. Mr. Kirker was born in Cadiz(?) [illegible] March 4, 1866 [illegible] from Ohio State University in 1889 with a bachelor of science degree. He joined Westinghouse Electric and Manufacturing Company, now Westinghouse Electric Corporation, Pittsburgh, Pa., in 1890, and was [illegible] Bed Rock [illegible] Corporation, Boise [illegible] Idaho [illegible] British and Norwegian Westinghouse companies. His work was largely in [illegible] and pertained to railway electrification [illegible] power plants [illegible] the factory [illegible] worked with the testing department and student course and later with projects [illegible]. He was resident engineer for the British Westinghouse Company [illegible] the London Metropolitan Railway electrification and the Mersey [illegible] Railway electrification [illegible] Liverpool. He was also resident engineer for the Grand Trunk Railway St. Clair Tunnel electrification [illegible] Port Huron, Mich., and Sarnia, Ontario, Canada. He was a member of the Engineers' Society of Western Pennsylvania, the American Transit Association, the American Association for the Advancement of Science, and many pomological societies.

Royce Allen Beekman (AM [illegible], M [illegible], Member for Life) retired, died Ap[illegible] 1953. Mr. Beekman was born [illegible]



GINEERING CORPORATION
NSTRU TORS
ROAD STREET
NEW YORK 4 N Y
Mr. Leland I. Anderson
127 Seymour Avenue Southeast
Minneapolis 14, Minnesota

October 11, 1955
AJL 10/11/55-2

Dr. Leland I. Anderson
The Tesla Society
Box 4088
Minneapolis 14, Minnesota

Dear Dr. Anderson:

In accordance with your letter of October 8th, I have written to the Tesla Society and am enclosing herewith a copy of this communication.

Although very indefinite for the reasons indicated, I hope it may be of some interest.

It was indeed a pleasure to have met you in Minneapolis and meet with your very hospitable and congenial group.

Let me again express the hope that you may find time, while in New York, to telephone me, and perhaps join me for luncheon.

With kindest regards,

Sincerely yours,

A. J. Liebmann

A. J. Liebmann

AJL:dc
Enc.

Schenley Industries, Inc.

EMPIRE STATE BUILDING

October 11, 1955
AJL 10/11/55-2

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A. J. Liebmann

AJL:dc
Enc.

[illegible]
[illegible]

[illegible] T sla Society
Box 4088
Minneapolis 14, Minnesota

Gentlemen:

My acquaintance with Dr. Nikola Tesla dates back, to the best of my recollection, to 1914. However, I have no written records of either the dates or the substance of my conversations with him, so that I will have to rely entirely to my memory.

At that time, I was Vice President and General [illegible] Fire Company, an affiliate of General Motors Corporation, [illegible] lamp and [illegible] engaged in the manufacture of incandescent lamps, tungsten, contact points, and other tungsten and molybdenum products.

The President of the company was Mr. Nathan Hofheimer, a [illegible] who had at various times been engaged in the financial support of various inventors.

Tesla had been referred to Mr. Hofheimer, I believe, by Mr. McFarland, who had invented a high frequency luminous tube light. He had some connection with the General Electric Company, but had also received financial assistance from Mr. Hofheimer, who represented him in the sale of his invention to foreign countries.

Since Hofheimer had no technical training, he commissioned me to interview Tesla and then make my recommendation.

Tesla was then nearly sixty years old but appeared to be younger and very vigorous. He was tall, sparse, and bubbling over with enthusiasm. He had come to Hofheimer for financial support for research and development of his ideas of wireless power transmission.

Unfortunately, his ideas, at that time, were vague and nebulous. He only knew for fact that electric impulses could be sent without wires, and he visualized the adaptation of the principle to the transmission of electric power.

I clearly remember him stating that he could foresee the erection of a powerful central station near a source of hydroelectric power, and the broadcasting of this power from a suitable location such as perhaps a tower in the Rocky Mountains to any desired location. "The time will come" he stated, "when we will run steamers by wireless across the ocean, railroad trains in China, and perhaps ultimately airplanes all over the earth".

He admitted that beyond seeing the possibility of such accomplishments, he had no concrete ideas, much less practical data, which would indicate the direction of the research he wanted to conduct, nor could he give any estimates of cost for necessary laboratories and running expenses.

October 8, 19[illegible]

[illegible]. J. Liebmann,
Technical Director
Schenley Distillers Corp.
350 Fifth Avenue
New York 1, New York

Dear Mr. Liebmann:

It was indeed a pleasure to talk with you during your visit to the Minneapolis chapter of the Manuscript Society last month and to learn of your very interesting collection. I was naturally quite surprised to discover that you had an acquaintance with Nikola Tesla some years ago.

A great deal has already been planned to commemorate the Tesla Centennial Anniversary next year. The [illegible] tute of Electrical Engineers and the [illegible] Engineers have pledged their full support in the celebration. A Tesla commemorative postal issue will be requested.

I will be in New York City next week to attend the Audio Fair. Although my time is nearly all committed, I will try to see you. In any event, I would very much appreciate your preparing a list of of dates and places when you met Tesla personally, and sending this list to the Tesla Society. Such information will be helpful in filling-in the missing links of the Tesla story.

With warm regards and best wishes I am,

Sincerely yours,

Leland I. Anderson

THE TESLA SOCIETY
Box 4088
Minneapolis [illegible], Minnesota


VIA AIR MAIL
Dr. Leland J. Anderson
Tesla Society
Minneapolis 14, Minnesota

Schenley Industries, Inc.

EMPIRE STATE BUILDING, 350 FIFTH AVENUE NEW YORK 1, N.Y. TELEPHONE CHICKERING 4 2200

October 11, 1955
AJL 10/11/55-1

The Tesla Society
Box 4088
Minneapolis 14, Minnesota

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He admitted that beyond seeing the possibility of such accomplishments, he had no concrete ideas, much less practical data, which would indicate the direction of the research he wanted to conduct, nor could he give any estimates of cost for necessary laboratories and running expenses.

The Tesla Society

October 11, 1955

Since, at that time, our company was of limited size and resources, we felt that such a venture into pure scientific research was too uncertain, and we regretfully informed Tesla that we could not undertake to finance him unless he would be able to submit more definite ideas and proposals.

Tesla cheerfully admitted that he fully understood this position and had hardly expected a different result. I recall that I took him to luncheon at the old Woodward Hotel across from our offices at 55th Street and Broadway. He visited us again once or twice during the next two or three years, without, however, apparently having advanced his project of wireless power transmission to a point where industrial development appeared possible.

As stated above, I have, unfortunately, no documentary evidence of Tesla's plans and our discussions concerning them. If there should be any particular point on which I can give you further information, please do not hesitate to write me again.

Sincerely yours,

A. J. Liebmann

A. J. Liebmann

AJL:dc

A J LIEBMANN, PH D

TECHNICAL DIRECTOR
SCHENLEY DISTILLERS CORPORATION
NEW YORK N. Y.

Presidents and Books

by Alfred J. Liebmann

Reprint from MANUSCRIPTS, *Winter*, 1955.

THE CATHEDRAL CHURCH OF ST. JOHN THE DIVINE
CATHEDRAL HEIGHTS, NEW YORK 25, NEW YORK

THE REVEREND EDWARD N. WEST, D.D., LI
CANON SACRIST

March 19, 1963

Dear Mr. Anderson:

Bishop Manning, Dr. Hardy, Father Morgan, and I were in attendance at Tesla's funeral. The funeral took place at four o'clock in the afternoon on Tuesday, the 12th of January 1943. The service was conducted by The Very Reverend Dushan Shoukletovich. Father Shoukletovich had known Tesla, and the funeral was held here at the request of the Church's authorities, since the Serbs had not as yet their splendid Cathedral in New York. Bishop Manning consented to have the funeral here only on the strict understanding that there would be no political speeches made. Therefore, he ruled out one "Ban" who showed up for the avowed purpose of making political capital.

Following on the dreadful afflictions suffered by the Serbians at the hands of the Ustashi, the death of so distinguished and famous a Serb gave the Serbian-American people a tremendous emotional outlet. The service was heavily attended as I remember. There was certainly at the time not the slightest suggestion on the part of either the Serbian clergy or the people that Tesla died in anything other than acceptable Orthodox standing.

You will probably know enough about the Orthodox Church to realize that a man's scientific opinions or scholarly ones would not in ordinary circumstances concern the church at all. If, on the other hand, a man made a great public attack on the church or its standards as did Tolstoy, then public discipline would be administered for public scandal. You might be able to get some further details from The Very Reverend Dushan Shoukletovich, 4112 Vivian Street, San Diego 15, California.

The above is the same information we sent to Mrs. Nelson V. Hunt of Colorado Springs, Colorado who requested it some time ago. I hope this information will prove helpful to you.

Sincerely yours,

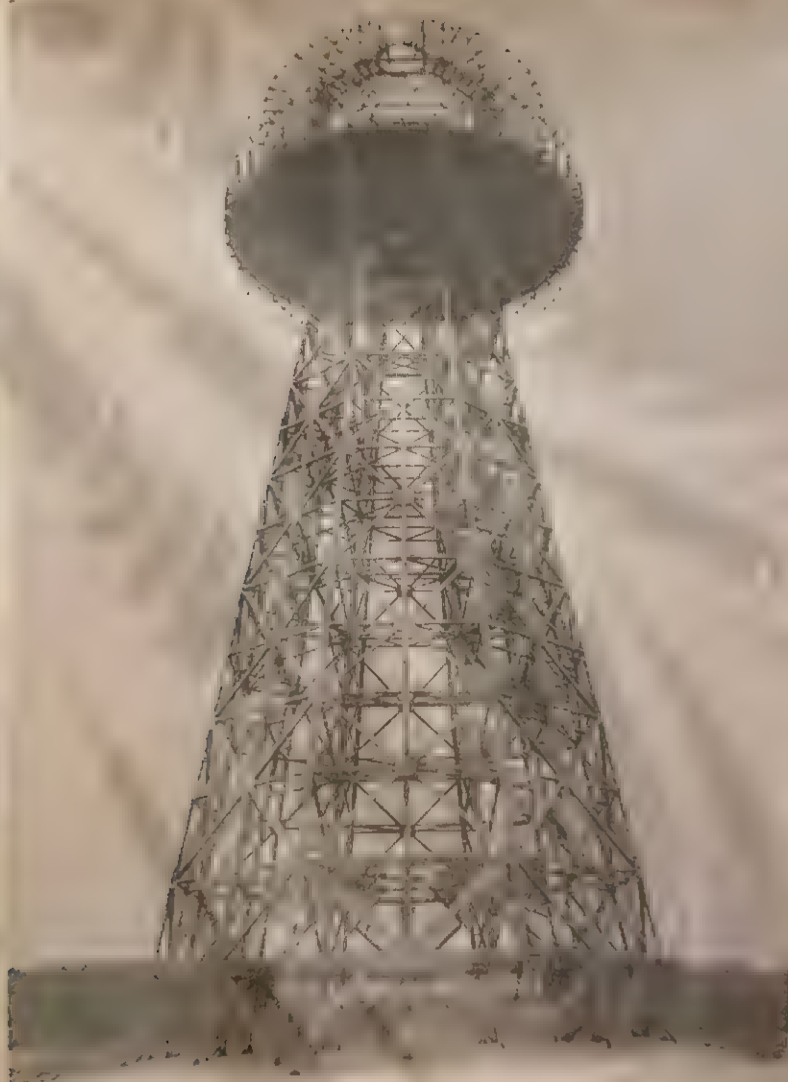
Edward N. West

The Reverend Canon West

Mr. Leland I. Anderson
4520 Highway 7
Minneapolis 16, Minnesota

THE TRANSMISSION OF ELECTRIC ENERGY WITHOUT WIRES

TESLA CENTRAL POWER PLANT AND TRANSMITTING TOWER FOR "WORLD TELEGRAPHY."
LONG ISLAND N. Y.



TESLA CENTRAL POWER PLANT AND TRANSMITTING TOWER FOR "WORLD TELEGRAPHY"
LONG ISLAND, N. Y.

THE TRANSMISSION OF ELECTRIC ENERGY WITHOUT WIRES.

BY NIKOLA TESLA

I [illegible] to resist [illegible] uch mome[illegible] [illegible] viced the [illegible] [illegible] expectations, the quick flig[illegible] [illegible] f realizati[illegible]. The following [illegible] for your initiative, might not [illegible] been given to the w[illegible] [illegible] yet, are [illegible] offered in the friendly spirit of [illegible] wishes for your future success accompany them.

[illegible] the close of 1898 a systematic research, carried on for a [illegible] years with the object of perfecting a method of t[illegible] [illegible] ical energy through the natural medium, led me to [illegible] important necessities: First, to develop a transmitter [illegible] second, to perfect means for individualizing and isolating the [illegible] transmitted; and, third, to ascertain the laws of propa[illegible] through the earth and the atmosphere. Various reas[illegible] least of which was the help proferred by my friend Le[illegible] [illegible] and the Colorado Springs Electric Company, determ[illegible] [illegible] ect for my experimental investigations the large plateau, t[illegible] meters above sea level [illegible] of that delightful re[illegible] which I reached late in May, [illegible] not been there but a [illegible] days when I congratulated m[illegible] the happy choice and I began the task, for which I had lon[illegible] myself, with a grateful sense and f[illegible] [illegible] hope. The p[illegible] purity of the air, the unequaled beau[illegible] [illegible] imposing si[illegible] of a high mountain ra[illegible] [illegible] of the pla[illegible] all around contributed to make the conditions for scienti[illegible] observa[illegible] [illegible] ideal. To this was added the exhilarating influence [illegible] [illegible] and a singular sha[illegible] [illegible] organs undergo percept[illegible] [illegible] extraordinary [illegible] [illegible] more susceptible [illegible]

[illegible] trunks up or dow[illegible] [illegible] for [illegible] [illegible] of their [illegible]

In the latter [illegible] my instrument were affe[illegible] great distances than [illegible] What was the cause? A number [illegible] could not be due to the differenc[illegible] discharges [illegible] the result of [illegible]

[illegible] was suddenly [illegible]

It was [illegible] July—the date I shall never [illegible] experimental evid[illegible]

THE TRANSMISSION OF ELECTRIC ENERGY WITHOUT WIRES.

BY NIKOLA TESLA

I [illegible] courtesies [illegible] extended [illegible] the [illegible] Your [illegible] ripening friendship [illegible]

[illegible]

[illegible] A highly sensitive [illegible] instrument [illegible] was connected to [illegible] capacity. The [illegible] the primary [illegible] their affected [illegible] intensity. The [illegible] vibrations and [illegible] No better opportunity [illegible] such observations [illegible] investigation [illegible] to make could be found anywhere. Colorado is a country famous for the natural displays [illegible] In that dry [illegible] rarefied atmosphere the sun's rays [illegible] intensity. I raised [illegible]

[illegible] Lowenstein, [illegible] presented [illegible] and unmistakably, [illegible] No doubt whatever [illegible] waves.

[illegible] the receiving circuit [illegible] Impossible is [illegible]

[illegible] typical of [illegible] It is [illegible] of this unique appliance, by the aid of which the globe will [illegible] formed. The electro-magnetic radiations being reduced to [illegible] quantity, and proper conditions of resonance [illegible] circuit acts like an immense pendulum, storing indefinitely [illegible] of the primary exciting impulses and impressing upon the [illegible] conducting atmosphere uniform harmonic oscillations [illegible] which, as actual tests have shown, may be pushed [illegible] those attained in the natural displays of static [illegible]

[illegible] the [illegible] of individualiza-[illegible] Great importance was [illegible] meet the vigorous practical requirements, [illegible] idea of employing a number of distinctive elements [illegible] cooperatively associated, for the purpose of isolating energy transmitted, I trace directly to my perusal of [illegible] expression of the human nerve mechanism [illegible] the transmission of intelligence and electrical energy in general cannot as yet be estimated, for the art is still in the embryonic stage, but many thousands of simultaneous telegraphic and telephonic messages, through one single conducting [illegible] and without serious mutual interference, are certainly [illegible] while millions are possible. On the other hand, any [illegible] degree of individualization may be secured by the use of a great number of co-operative elements and arbitrary variation of their distinctive features and order of succession. For obvious reasons the principle [illegible] be valuable in the extension of the distance of transmission [illegible] though of necessity slow was steady and sure [illegible] at were in a direction of my constant study and ex[illegible] therefore, not astonishing that before the end of 1899 [illegible] the task undertaken and reached the results which I [illegible] in my article in the *Century Magazine* of June 1900 [illegible] of which was carefully weighed.

[illegible] has already been done towards making my system [illegible] in the transmission of energy in small amounts [illegible] on an industrial scale. The [illegible] scheme of intelligence trans[illegible] name of "W[illegible]" [illegible] *It constitutes, I believe, in its principle of operation* [illegible] a radi[illegible] [illegible] and less accessible [illegible] comfort [illegible] general safety [illegible] peaceful relations [illegible] all of which are [illegible] to the uttermost confines [illegible] center [illegible] preferably located near some [illegible] and it [illegible] receives through any channel [illegible] of the globe. A cheap and simple [illegible] might be carried in one's pocket may then be set up [illegible] sea or [illegible] it will record the world's news [illegible]

[illegible]

I [illegible] the work [illegible] devoted to the [illegible] as all [illegible] Stat[illegible] through the [illegible]

Meanwhile, [illegible] not being neglected [illegible] offered me a [illegible] the sake of the art [illegible] greatest [illegible] their concession financially pro[illegible] plant, which I have been designing [illegible] which [illegible] produce and handle [illegible]

The [illegible] collected [illegible] the globe [illegible] practical [illegible] few [illegible] its chief uses will be the [illegible] takes very little power to light [illegible] with [illegible] high frequency currents [illegible] will be the driving [illegible] will be exceedingly [illegible] America [illegible] that [illegible] world [illegible] plant [illegible] but [illegible]

Knowing [illegible] its effect upon [illegible] development [illegible] experience has taught [illegible] I know the [illegible]

When the great truth [illegible] and that [illegible] the [illegible] energy [illegible] with stock. See the [illegible]

second, this p... despite ... of limited dimensions. The tren... ...ission of energy by no... Not only was it ...

...st one ... and small resistance ... and action, may be said to ... ...ing circuit, typical of ... ...rations. It is difficult to ... power of this unique appliance, ... be transformed. The electromag... ...significant quantity, and prop... it acts like an immense pendulum,

...tual tests have shown, may be ... ...med in the natural displays ...

... with these end... were gradually ... importance was ... ...ning was not suffi... ...he fundamental ... co-operatively associated. ... of isolating energy transmitted. I trace direct... to m... Spencer's clear and suggestive exposition of the human ... The influence of this principle on the transmission of ... cannot as yet be est... still in the e... but many thousands ... sages, through one ... and without serious mutu... interf... practi... while millions are possibl... and, any desired de... of individualization may be secured by the use of a great number of co-operative elements and arb... and order of successi... distu...

...ss though of necessity slow was ste... objects aimed at were in a direction of my ... It is, therefore, not astonishing that be... the end of 1899 ... the task undertaken and reached the ... in my article in the *Century Magaz*... June 1900 ... word of which was carefully weighed.

... has already been done towards making ... in the transmission of energy in ... on an industrial scale. The ... scheme of intelligence trans... ...phy" has been ...

... plant, which ... distribute ten thousand horse po... million volts, which I ... safety.

This ... will be collected ... small amou... One of its chief uses ... takes very little p... ...ed by high frequen... above the roof will be ... will be the driving of clocks and ...

When the great truth ...

EXPERIMENTAL LABORATORY COLORADO, ERECTED SUMMER OF 1899

DISCOVERY BY MR. TESLA OF THE STATIONARY WAVES ON THE EARTH WAS MADE HERE

EXPERIMENTAL LABORATORY, COLORADO, ERECTED SUMMER OF 1899.

(DISCOVERY BY MR. TESLA OF THE STATIONARY WAVES OF THE EARTH WAS MADE HERE.

EXPERIMENTAL LABORATORY, COLORADO, ERECTED SUMMER OF 1899.

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WILLIAM H. CROW, P.E.
EDWIN L. FAIRFIELD, R.A.

GEORGE A. HARTUNG, P.E.

CROW LEWIS & WICK
ARCHITECTS & ENGINEERS
200 FIFTH AVENUE
NEW YORK · 10 · N · Y ·

[illegible]

Mr. Roland [illegible]. Anderson
[illegible] East River Terrace
Minneapolis 14, Minnesota

Dear Mr. Anderson:

This will acknowledge receipt of your letter of July 9 relative to material for a book you are writing about Dr. Nikola Tesla.

As you may know, John J. O'Neill at the time he was the Science Editor of the New York Herald Tribune, wrote the "Prodigal Genius," which was published by Ives Washburn, Inc., 119 West 40th Street, New York 19, New York.

My father, William D. Crow, assisted Mr. O'Neill to the extent of furnishing him data relating to the wood transmission tower he had designed in connection with Dr. Tesla's experimentation on transmitting energy through the air. It was my recollection that Dr. Tesla had intended to demonstrate that a lamp might be lighted in Europe from energy transmitted from this tower. The tower itself was destroyed by this government at the beginning of World War I to prevent its use by enemy agents. I have consulted with Mother, who has all of the original data, and find that there is nothing among her papers that is not covered in the "Prodigal Genius."

With very best wishes for success in your venture, I remain

Sincerely yours,

W. H. Crow

WHC:mc

W. H. Crow

PEERLESS PHOTO PRODUCTS, INC
SHOREHAM, L. I., N. Y. 11786
TELEPHONE AREA CODE 516-744-6600

EDGAR A. KNIFFIN
PR[illegible]T

March 30, 1970

Mr. Leland I. Anderson
Sperry Rand Corporation
P. O. Box 3525
St. Paul, Minnesota 55101

Dear Mr. Anderson:

I recently had a most interesting visit here with Leland Roth. The addressee of the letter of which is enclosed.

He is a graduate of the Yale School of Architecture. He is working toward his Phd., and is doing a thesis on the activities of the firm of McKim, Mead & White.

He had been searching for months for a place, [illegible]Varden Clyffe", and learned where it was while spending a weekend with friends of mine in the area.

Sincerely yours,

Ed

Edgar A. Kniffin

EAK:gp
Encl.

March 26, 1970

Mr. Leland M. Roth
250 Fountain Street
New Haven, Conn. 06500

Dear Leland:

I am truly sorry that you and the Schaberts weren't able to make it over to our house last Sunday.

As I said on the phone, I found nothing that would be of real interest to you in the loose leaf book that I had at home. The only additional item of information that I have been able to come up with (as the result of looking at a number of old pictures) has to do with the entrances of the building. There was, in fact, a doorway at the center of the building on the North side. This would seem to confirm that the reprint of the photograph on the cover of Leland Anderson's article is factual. Also, from another photograph, I confirmed that there was a similar entrance on the South side of the building (where we looked at the brick) and that this was filled in after we purchased and modified the building.

I am enclosing a copy of the reprint of Anderson's article which originally appeared in the Long Island Forum in August and September 1968. Also enclosed is a copy of the two-page Anderson bibliography that you looked at while you were here.

I believe that you took Anderson's address with you but if you did not, the address, according to our records, is:

Business: Mr. Leland I. Anderson
c/o Sperry Rand Corporation
P. O. Box 3525
St. Paul, Minnesota 55101

March 26, 1970

Mr. Leland M. Roth
250 Fountain Street
New Haven, Conn. 06500

Dear Leland:

I am truly sorry that you and the Schaberts weren't able to make it over to our house last Sunday.

As I said on the phone, I found nothing that would be of real interest to you in the loose leaf book that I had at home. The only additional item of information that I have been able to come up with (as the result of looking at a number of old pictures) has to do with the entrances of the building. There was, in fact, a doorway at the center of the building on the North side. This would seem to confirm that the reprint of the photograph on the cover of Leland Anderson's article is factual. Also, from another photograph, I confirmed that there was a similar entrance on the South side of the building (where we looked at the brick) and that this was filled in after we purchased and modified the building.

I am enclosing a copy of the reprint of Anderson's article which originally appeared in the Long Island Forum in August and September 1968. Also enclosed is a copy of the two-page Anderson bibliography that you looked at while you were here.

I believe that you took Anderson's address with you but if you did not, the address, according to our records, is:

Business: Mr. Leland I. Anderson
c/o Sperry Rand Corporation
P. O. Box 3525
St. Paul, Minnesota 55101

Home: 5 Circle East
Minneapolis, Minn. 55424

If there is anything further that I can do to be of help, please let me know. Also, as I said to you, I shall be very much interested in adding to our collection any additional material that may become available.

Sincerely yours,

EAK:ro

E. A. Kniffin

Edgar A. Kniffin
Horse Race Lane
St. James, New York 11780

October 28, 19[illegible]

Mr. Dana Arndt
P. O. Box 292
Minneapolis, Minnesota 55440

Dear Mr. Arndt

I have been delayed in answering your letter of October [illegible] regarding the Tesla Tower [illegible] because I have been in the hospital for an operation.

I am sorry I missed your visit to the Plant on September 3rd. I retired as President of the Company on September 1st and would [illegible] over to supplement your visit with John Bahrmann.

As a lawyer, then practicing in New York City, [illegible] Company, I located the Tesla property and arranged [illegible] 1938. Since that time I have spent a [illegible] of [illegible] about the Tesla project and have to tell you I have not been very suc[illegible]

It is known [illegible] you are [illegible] I have to say – that Nicholas Tesla, following his success[illegible] current generator, decided [illegible] into competition with [illegible] believe that the [illegible] power by radio. How he [illegible] to locate [illegible] furnished by J. P. Morgan, and working from [illegible] of the very prestigious architectural firm of McKim, Mead & White) the [illegible] erected about 1900. Basically it consisted of the rectangular building (boiler stack in center) which you saw, and an enormous tower about [illegible] feet to the south of the building.

Tesla was a high liver; he lived at the [illegible] hotel in New York City and commuted to the Plant each day in a private car on the Long Island [illegible] ran out of funds about 1907 and the project was abandoned. The tower was taken down during World War I, reportedly because it was being used as a method of communication with German submarines off-shore.

The tower was made of wood capped by an enormous inverted hemisphere. The dimensions of that were probably about the same as the dimensions of the [illegible] concrete footings, which you were probably shown. My search for documentation has been [illegible] There are no plans or specifications on file in the appropriate offices in Suffolk County and the Town of Brookhaven. There remain no records of the project in the files of McKim, Mead & White. Nor are there any records on file with the New York Historical Society.

We are aware that there was reputed to be a mass of underground tunnels, but we have unearthed little evidence of this and have no information as to their purpose.

The pit under the tower was reported to be of the same depth as the height of the tower – 150 feet. Heresay indicates that in transmitting power the positive element would be transmitted by air and the negative through the ground from the bottom of the pit (or vice versa).

The man who probably knows more about this whole subject than anyone else is:

Mr. Leland Anderson
1709 Eldridge Avenue W.
St. Paul, Minnesota 551[illegible]

You might be interested in communicating with Mr. Anderson so I am sending him a copy of this letter. We would be greatly appreciative of having for our Company Historical Files, copies of any data you may be able to assimilate.

Sincerely,

Edgar A. Kn[illegible]

EAK:gp

cc: Mr. Leland Anderson ✓

[illegible] SAVINGS BANK
[illegible] JAMAICA AVENUE
[illegible] NEW YORK 11432

[illegible]ecember [illegible], 19[illegible].

[illegible] [illegible]nderson
[illegible] [illegible]enue [illegible]
[illegible], [illegible]ota [illegible]

[illegible] Mr. An[illegible]n:

[illegible]hank [illegible] so much for [illegible]
[illegible]esla.

In r[illegible]viewing the research for our [illegible] [illegible]his great achievements and [illegible] [illegible] time. [illegible] partic[illegible]ly [illegible] this brill[illegible] [illegible] astronaut [illegible] around t[illegible] [illegible] of [illegible] [illegible], both [illegible] [illegible]itute to [illegible] science. [illegible] how [illegible] [illegible]not [illegible] [illegible] Tesla not [illegible]ountered [illegible] [illegible]ve [illegible] [illegible] [illegible] difficulty.

[illegible]ncerely yours,

[illegible]

President

LIST OF OFFICES

MAIN OFFICE
161-01 JAMAICA AVENUE
Jamaica 32, N. Y.

Sutphin Boulevard Office
146-21 JAMAICA AVENUE

[illegible]
[illegible]-24 188th STREET

[illegible] Office
216-19 JAMAICA AVENUE

[illegible]
1525 CENTRAL AVENUE

Jackson Heights Office
81-01 37th AVENUE

[illegible] Park Office
211 BEACH 116th STREET

[illegible] Office
[illegible]
89-01 QUEENS BOULEVARD at 56th AVENUE

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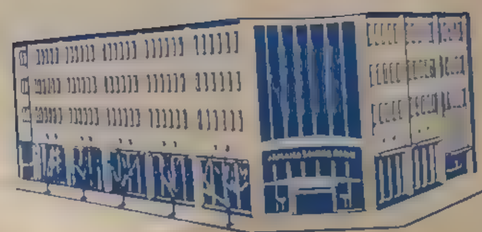
  - [illegible]ventionals
  - F.H.A. & G.I. Loans
- Safe Deposit Boxes
- [illegible]
- Vaca[illegible]

OUR MURAL



JAMAICA SAVINGS BANK

AMAICA SAVINGS BANK
161 01 JAMAICA AVENUE
JAMAICA, NEW YORK 11432

December 30, 1968.

Mr. Leland I. Anderson,
1709 Eldridge Ave. West,
St. Paul, Minnesota 55113

Dear Mr. Anderson:

Thank you for sending me "Wardenclyffe - A Forfeited Dream".

There are too few people who know of the tremendous ability of Nikola Tesla and how a little more financial support for him would have substantially shortened our entry into the wonders of today.

Faithfully,

JA:GM

Times-Mirror Syndicate
Los Angeles, California

PROFILES IN SCIENCE by Patrick and Getze

RELEASE DATE: On or after December 9-10, 1961

NIKOLA TESLA

Nikola Tesla was not only a great genius of electrical science, but a great genius of incorruptible individuality as well.

His name was a household word in the early years of this century after his invention of the induction motor and his perfection of the principle of the rotary magnetic field used in transmitting electric power from Niagara Falls.

Tesla invented and improved dynamos, transformers, induction coils, condensers, arc and incandescent lamps, and lamps that used electrically charged gas and were the forerunners of modern fluorescent lights and neon tubes.

Tesla is also credited by many scientists with laying the scientific foundation for such inventions as the wireless, the wireless or "beam" transmission of electrical power, of many of the machines of today's automation and of the cyclotron used to smash the atom.

Tesla's individualism was characterized by the "grand gesture."

He quit good jobs because of his disagreements with his employers. One of his bitterest quarrels was with Thomas Edison.

Tesla was born in Yugoslavia in 1856. He studied at Graz, Austria, and at the University of Prague. After making a considerable reputation in Europe he went to the United States in 1884 to work with Edison.

After he had improved Edison's generators he quit when his request for a promised $50,000 reward was turned aside as a joke.

After leaving Edison he worked for George Westinghouse, the great inventor and founder of the Westinghouse Electric Co. When Westinghouse got into difficulties during a financial panic, Tesla, declaring Westinghouse had been his true friend, dramatically tore up his royalty contract, an act that cost him millions of dollars.

In 1912 Tesla and Edison were jointly offered the Nobel Prize in Physics.

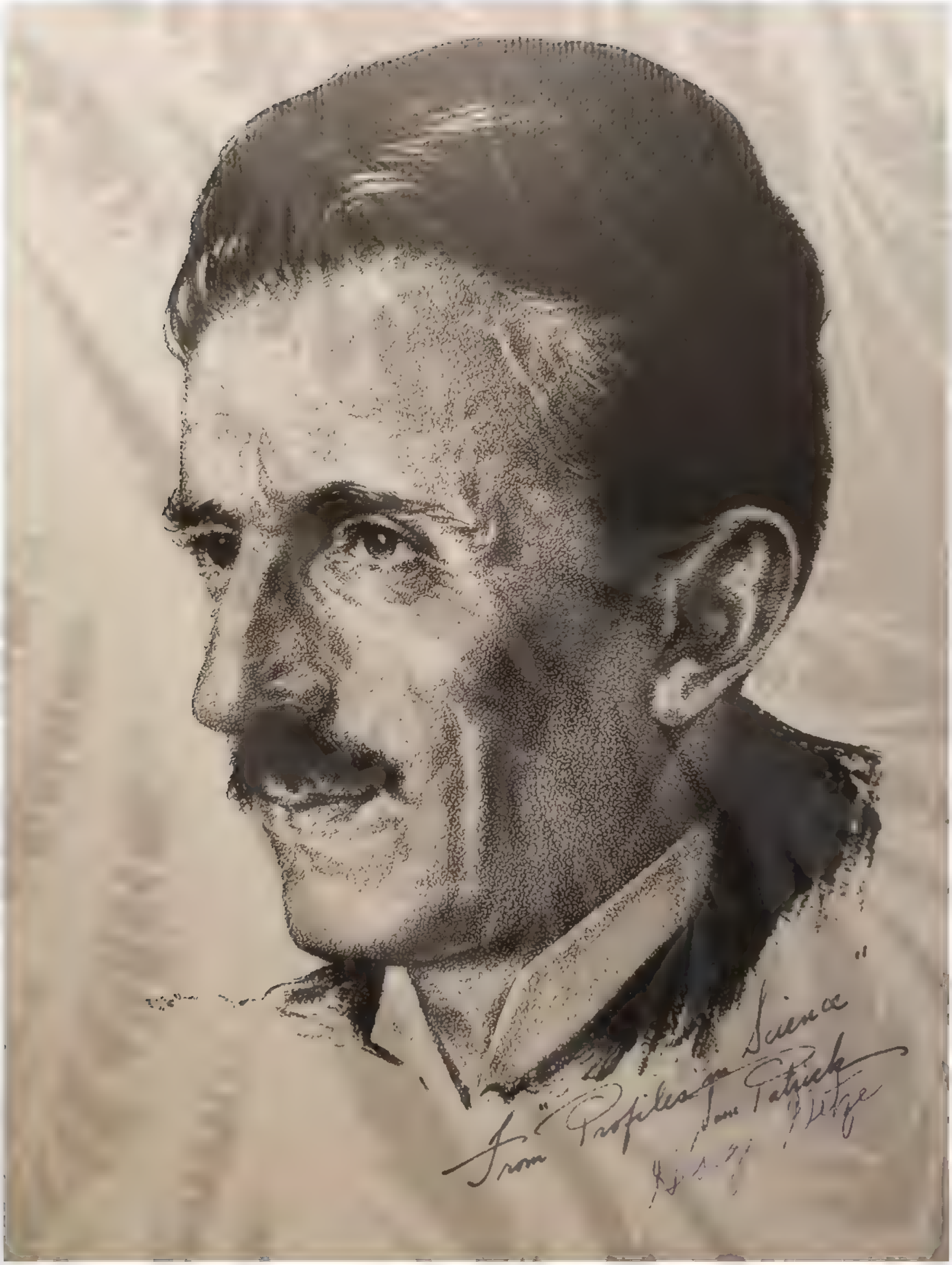
In the "grandest gesture" of all, Tesla indignantly refused to share the prize.

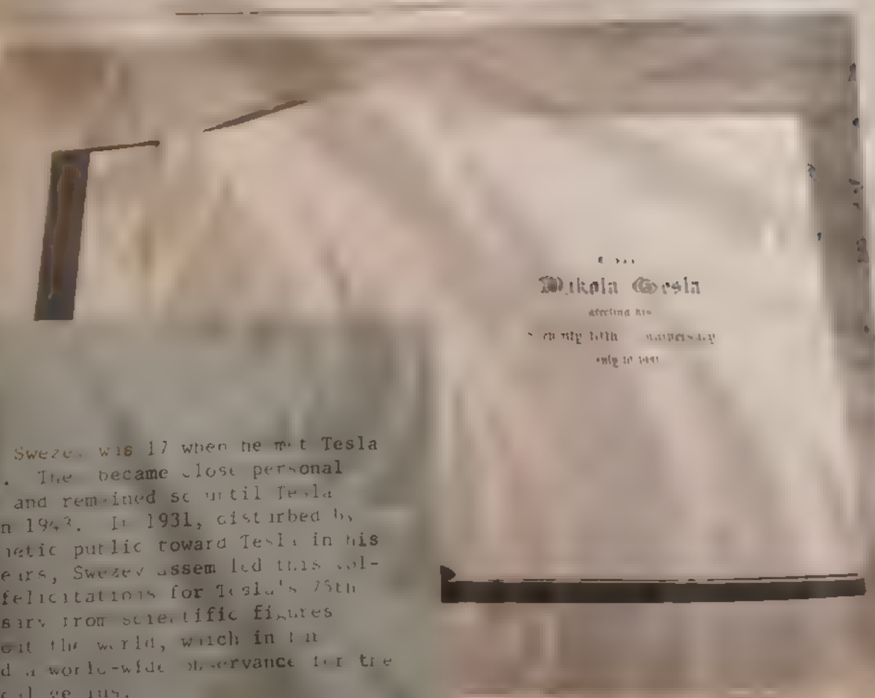
The honors Tesla most appreciated came to him in England, where the Royal Society honored him by seating him in the chair once owned by Michael Faraday, and where he was given a sip from Faraday's bottle of whiskey.

Tesla died in New York in 1943

Reading: "The Prodigal Genius," by J. J. O'Neill.

NEXT WEEK: William Roentgen, the discoverer of the X-ray.


From "Profiles in Science"
Sam Patrick



Kenneth Swezey was 17 when he met Tesla in 1921. They became close personal friends and remained so until Tesla's death in 1943. In 1931, disturbed by an apathetic public toward Tesla in his later years, Swezey assembled this volume of felicitations for Tesla's 75th anniversary from scientific figures throughout the world, which in turn prompted a world-wide observance for the electrical genius.

Despite Ken Swezey's interest in and gift for taking pictures of others, there are relatively few of him.

The first and earliest does have noted on the back that it was taken at the time of his graduation from grammar school. This was the last formal education that he had. A truly remarkable young man, as he appears in the photograph, he found that formal education was much too pedantic for his intellectual progress. His mother made sure that on his lapel he displayed in a point of prominence his Sunday School pin reflecting regular attendance in Sunday School.

The third picture where Ken is standing before a set of the encyclopedia in his flat at 163 Milton Street in Brooklyn has no indication of when it was taken but from his appearance I would assume that it was during the 1920's.

SMITHSONIAN
RATZLAFF


Kenneth M. Swezey

KENNETH SWEZEY (b. June 11, 1904; d. Feb. 25, 1972) was 17 when he met Tesla in 1921. They became close personal friends and remained so until Tesla's death in 1943. In 1931, disturbed by an apathetic public toward Tesla in his later years, Swezey assembled a volume of felicitations for Tesla's 75th anniversary from scientific figures throughout the world, which in turn prompted a world-wide observance for the electrical genius.

Photo courtesy R. MacCrate.

ROBERT MACCRATE
125 BROAD STREET
NEW YORK, N.Y 10004
(212) 558 3614

October 29, 1979

Mr. Leland Anderson,
2525 South Meade Street,
Denver, Colorado 80219.

Dear Mr. Anderson:

I was most interested to receive your letter of October 18 regarding the major biography which is in preparation of Nikola Tesla and in which it is contemplated that the close relationship between Tesla and Ken Swezey will be discussed.

As you will recall Ken's personal effects came into my hands at the time of his death and they included a collection of family photographs for which I have not found anyone who was sufficiently close to Ken within his family circle to have any particular interest in holding them. Accordingly, I have continued to have the photographs in my care and upon receiving your request went to the files and found a somewhat sparse collection of photos of Ken himself. Despite his interest in and gift for taking pictures of others there are relatively few of him. Those which I have been able to find which appear to come from around the period in which you are interested I am enclosing with this letter. They are the only copies which I have and I would

appreciate their return after you have had an opportunity to examine them and to make arrangements for the duplication of any one that would seem appropriate for your purposes.

The first and earliest does have noted on the back that it was taken at the time of his graduation from grammar school. You will recall that this was the last formal education that he had. A truly remarkable young man, as he appears in the photograph, he found that formal education was much too pedantic for his intellectual progress. (I am interested to note that his mother made sure that on his lapel he displayed in a point of prominence his Sunday School pin reflecting regular attendance in Sunday School.)

The large photograph was one in which Ken took particular pride because it was so uncharacteristic of him in his earlier years. This was taken on a camping trip and I remember Ken showing it to me with some pride since he is inspecting his unshaven beard. I hardly think that this is appropriate for the purpose you have in mind but I surmise that it is as close to the time that you are aiming for as any of the photographs.

The third picture where Ken is standing before a set of the encyclopedia has no indication

To Leland Anderson — with
kind regards and admiration for
his interest in [illegible] friend Tesla — [illegible]
from K. [illegible]

NIKOLA TESLA
Pathfinder of the Electrical Age

K M SWEZEY

Most engineers associate the name Tesla with the "Tesla coil," so popular for high-voltage demonstrations in the school laboratory. Few, however, know this strange, lonely genius as the inventive giant who not only laid much of the groundwork for radio, induction heating, and gaseous-tube lighting, but also invented the induction motor and the whole polyphase system which is the foundation of the modern electric power industry.

NEXT MONTH, the American Institute of Electrical Engineers will dedicate its Fall General Meeting in Chicago, Ill., to the 100th Anniversary of the birth of Nikola Tesla late Vice-President, Fellow, and Edison Medalist of the AIEE, strange and prolific genius — one of the greatest electrical inventors of all time

This will be a memorial, long overdue, for the practical and prodigal dreamer who gave the world besides basic discoveries in radio, electrotherapeutics, high frequency induction heating gaseous tube and fluorescent lighting, and wireless control of vessels and torpedoes —the foundations for its whole modern electric power industry.

Back in 1895, Tesla's revolutionary induction motor and polyphase system for the generation and transmission of electric energy made possible the first large-scale harnessing of Niagara Falls. Today, practically all the electricity in the world—more than 1,000 billion kwhr last year—is generated, transmitted, and turned back into mechanical power by means of Tesla's motor and system As proof that the Tesla system is as vital to the future Atomic Age as it was in helping to create the present age of electric power, the new General Electric power station at West Milton, N Y, pours the same kind of Tesla polyphase electricity into the same Niagara Mohawk network as the Niagara (N Y) plant of 1895, which is still going strong.

The story of how Tesla's polyphase inventions first demonstrated dramatically at Niagara—transformed an era of local electric lighting to the new age of electric light and power everywhere, and how this universal availability of electricity has in turn changed the life, industry, and economy of the world, is an epic of engineering that has yet to be completely told

A BRUSHLESS MOTOR

In 1877, Tesla, then 21, had begun to study engineering at the Polytechnic School in Gratz, Austria. A Gramme dynamo had just been received from Paris and Professor Poeschl was running it before the class as a motor Noticing

K M **Swezey** is a science and engineering writer and was a close personal friend of Tesla for many years

that the brushes sparked badly. Tesla wondered out loud whether a motor could not be designed *without* brushes. Poeschl exploded. Would this young marvel convert a steadily pulling force, like that of gravity, into a rotary effort? It was another impossible scheme!

But Tesla had more faith in his own instincts than in his teacher's knowledge, and for the next five years mentally designed and operated various types of d-c and a-c machines. In 1880, he transferred to the University of Prague and the following year he took a position with the newly formed telephone company in Budapest, Hungary.

One afternoon in 1882, the solution to his "impossible" motor flashed through his brain. Tesla saw clearly a brushless, commutatorless rotor spinning in an electric whirlwind, a rotating magnetic field produced by two alternating currents out of step with each other. Picking up a stick, Tesla drew diagrams on the sand—diagrams for the induction motor he was to present before the AIEE six years later.

Tesla came to New York in 1884 with four cents in his pocket, a headful of ideas for developing his brainchild, and a contract to redesign d-c motors for Thomas Edison. Completing this job, Tesla left Edison to work on his own. At first, finding no backing for his radical plans, he was forced to earn a living by digging ditches. By 1887, however, he had formed the Tesla Electric Company and had built models of his brushless motor which compared favorably with the best d-c machines of the day.

On May 1, 1888, Tesla was granted basic patents on his motor and on the associated method of transmitting power by polyphase currents. Two weeks later he delivered his classic lecture, "A New System of Alternate Current Motors and Transformers," before the AIEE.

When, in 1917, the AIEE presented the Edison Medal to Tesla for these inventions, Dr. B. A. Behrend commented on this lecture: "Not since the appearance of Faraday's 'Experimental Researches in Electricity' has a great experimental truth been voiced so simply and so clearly as this description of Mr. Tesla's discovery of the generation and utilization of polyphase alternating currents. He left nothing to be done by those who followed him. His paper contained the skeleton even of the mathematical theory."

WESTINGHOUSE BUYS TESLA'S PATENTS

TESLA'S MOTOR arrived at the height of the "battle of the currents and the systems." In 1888 there were operating in the United States several score of electrical "systems," each designed for a special use and usually named for a promoter or inventor. The fight between the advocates of direct current and alternating current was also under full sway.

Edison's low-voltage direct current had become popular for local lighting in big cities and was running a few small motors in printing plants and factories. Because direct current could not be transmitted economically more than about half a mile, however, d-c stations had to remain small and practically in a customer's backyard. Alternating current, however, could be generated in large bulk and transmitted many miles, but there was no practical a-c motor.

To George Westinghouse, who had founded the Westinghouse Electric Company two years before and already was America's foremost champion of alternating current, Tesla's motor seemed the missing key to a-c supremacy. By the end of July, Westinghouse had acquired rights to the polyphase patents and to Tesla's services.

The Tesla polyphase motor, however, proved to contain all the headaches and heartaches of an invention ahead of its time. In the first place, it was not an isolated device that would run by hitching it to an existing a-c line. It was part of a whole new method for the generation, transmission, and utilization of power. To sell the motor, Westinghouse would first have the job of selling Tesla's radical new system.

THE SPLIT-PHASE MOTOR

TO HELP OUT in the meantime, Tesla invented the split-phase motor, an ingenious adaptation that made one phase do the work of two. Even this motor would not work well on the 133-cycle current then in use. After long and costly experimentation, Westinghouse engineers finally decided to change the central station frequency to suit the motor. The frequency settled on was 60 cycles, the one now standard for general use.

Westinghouse's big chance to introduce the polyphase system came in 1892 when he was awarded the contract to light the Chicago World's Fair of 1893. For this job he improvised twelve 1,000-hp 2-phase generators from twenty-four 500-hp single phase generators, the largest then in existence, coupled in pairs. As an extra attraction, he exhibited the first complete polyphase system ever assembled. In this, current from a 2-phase generator was stepped up by a transformer, sent over a transmission line, stepped down again by transformers, used as 2-phase current to run induction and synchronous motors, and as single phase to light lamps and run split-phase motors. To show the complete adaptability of the system, a rotary converter changed polyphase alternating current into direct current for running a railway motor.

POLYPHASE SYSTEM HARNESSES NIAGARA

THIS EXHIBIT so impressed the engineering and scientific advisers of the Niagara Falls Power Company, which had been trying for years to find a satisfactory means to harness 100,000 hp of Niagara's power, that—against the advice of such authorities as Edison and Lord Kelvin—they decided to adopt the Tesla system on the spot.

In 1895, the first two 5,000-hp Tesla-Westinghouse polyphase generators began turning at Niagara. In 1896, a 22-mile line erected by J. G. White and equipped with transformers and rotary converters by the General Electric Company, carried Niagara power to run street cars and operate lights in Buffalo.

The success of Niagara was immediate and contagious. Seven more 5,000-hp generators were ordered from Westinghouse to complete Power House No. 1, and the General Electric Company, which was permitted to use the Tesla patents by a cross-licensing arrangement made with Westinghouse in 1896, was given a contract to make 11 similar generators for Power House No. 2. By the time the plant had been completed in 1903, practically all other big generating stations in the United States either had adopted the Tesla system or were about to change to it.

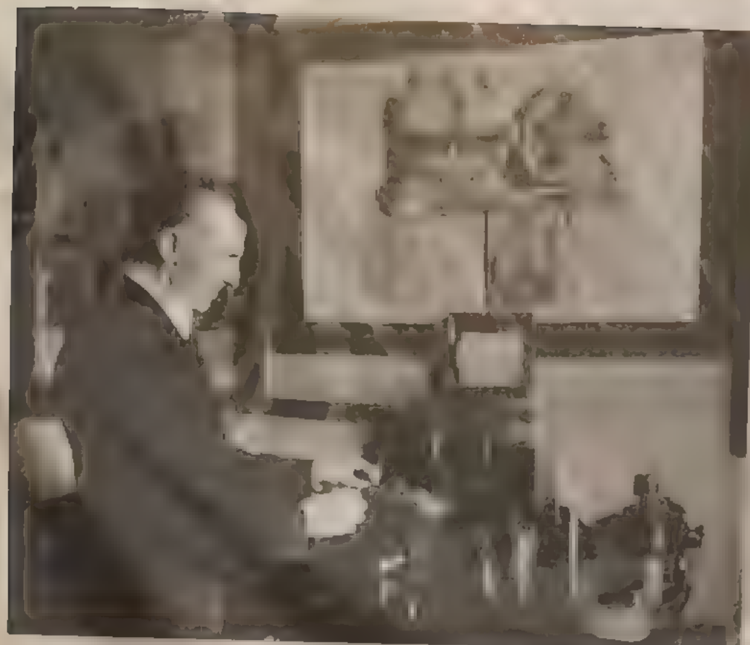


Fig. 1. Nikola Tesla, in his sixties, is shown adjusting a radio device in his New York laboratory. The picture on the wall is of an electromechanical oscillator which was built by Tesla in the 1890's

FIRST PLANT FOR INDUSTRIAL POWER

BEFORE NIAGARA, electric plants were designed primarily for lighting; the use of electricity for motors and heating was incidental. The Niagara plant was the first big station in the world planned primarily to deliver industrial power. Besides taking the place of steam engines in factories, this new power, provided in previously unheard-of quantities, made possible the commercial electric furnace and inaugurated a giant electrochemical industry.

The first customer of Niagara power was the Pittsburgh Reduction Company, now the Aluminum Company of America. Cheap Niagara power helped turn this now indispensable metal from an expensive novelty into a commercial success. With an electric furnace operated by a steam-driven generator, Dr. E. G. Acheson had made a commercial failure of carborundum. As Niagara's second customer he was enabled to found a giant artificial abrasives industry. Calcium carbide for acetylene; calcium cyanamide for nitric acid, explosives, and fertilizer; artificial graphite for motor brushes, furnace electrodes, battery carbons, lubrication; ferrosilicon, ferrochromium, ferrotitanium, for machinery, dies, armor; chlorine, phosphorus, caustics, ammonia, and so on — all these were born with the aid of Niagara power or made more cheaply because of it.

POLYPHASE PATENTS PROVED INVULNERABLE

LIKE ALL SUCCESSFUL INVENTIONS, the polyphase system and motor became involved in long and costly litigation. The biggest companies and the best brains in electrical engineering took sides in defending and fighting a series of inventions which covered all generation and use of polyphase power in the United States. To the astonishment and dismay of engineers who had regarded Tesla as an impractical genius, the polyphase patents turned out to be not only the most fundamental but also the most concrete patents in the industry. They were never broken. Originally nearly sending the Westinghouse Electric Company into bankruptcy, these patents soon became the foundation for its later greatness.

NEW FIELDS TO CONQUER

WITH CHARACTERISTIC indifference to the commercial development of his ideas, Tesla left his polyphase system for others to introduce and plunged on to new frontiers of science. Before the turn of the century, he had made substantial contributions to practically every branch of electricity.

Several years before the very first experiments of Marconi, Tesla developed high-frequency alternators and his famous "Tesla coil" for producing high voltages, a device which remains today in one form or other in every radio and television set. He then went on to invent and build rotary and series spark gaps, oil-insulated transformers and capacitors, mica capacitors impregnated with wax under a vacuum, stranded conductors of separately insulated wires (later called "Litzendraht"), arcs for producing continuous waves, choke coils, apparatus for selective tuning by means of a complex of several waves, and a "ticker" for receiving continuous waves.

Before 1898, Tesla had developed a number of wirelessly controlled mechanisms, and in that year built several boats that were started, stopped, steered, and otherwise operated by radio. He demonstrated these widely in New York in 1898, and before the Commercial Club in Chicago in 1899. This work, with what Tesla called "telautomatics," was the beginning of the concept which has led to today's array of wirelessly guided weapons.

WIRELESS LIGHTS AND RADIO BROADCASTING

DURING THE EARLY 1890's Tesla devised all kinds of wireless lights, vacuum and gas-filled tubes. He increased the brilliance of some by using uranium glass or coating them with phosphors, thus creating pioneer fluorescent tubes. He bent many to suit the requirements of the room

they were to light, and others to form words or names, as in modern display lighting. Tesla displayed some of his neon-type tubes in his personal exhibit at the 1893 World's Fair.

Among other achievements, he devised a turbine with smooth parallel blades and synchronous electric clocks which he hoped some day to power as well as synchronize by radio. He also attempted to transmit power wirelessly by disturbing the electrical charge of the earth. Before Marconi had flashed his famous "S" across the Atlantic, Tesla talked of a "World Wireless" system which not only would send messages, but also would connect all the telephone exchanges and stock tickers on the globe, send facsimiles of photos, checks, and records, and inaugurate a system of world printing. At the turn of the century, he gave a detailed description of the radio broadcasting that blossomed forth several decades later.

Fig. 2. Interior of Power House No. 1 of the Niagara Falls Power Company, at the turn of the century, the electrical wonder of the world. Installed in the years 1895-99, the ten 5,000-hp generators shown here are still in operation.

INSPIRATION TO OTHER PIONEERS

Besides his personal accomplishments and the countless fertile ideas which he scattered for others to harvest, Tesla's lectures and writings inspired many others into the new fields of radio and electrical engineering.

While a student at Yale, Dr. Lee De Forest began reading Tesla's writings. He wrote in his diary: "His (Tesla's) works are the greatest exciters to zealous work and study. To read those chapters on the higher vibratory forms, the intimate connection between light energy and electricity fires me with ambition to emulate It would make a genius of any man whose soul is not of clay." In his autobiography, De Forest states farther that this inspiration gave him the first clear intimation of the fascinating field of research that was later to frame his life.

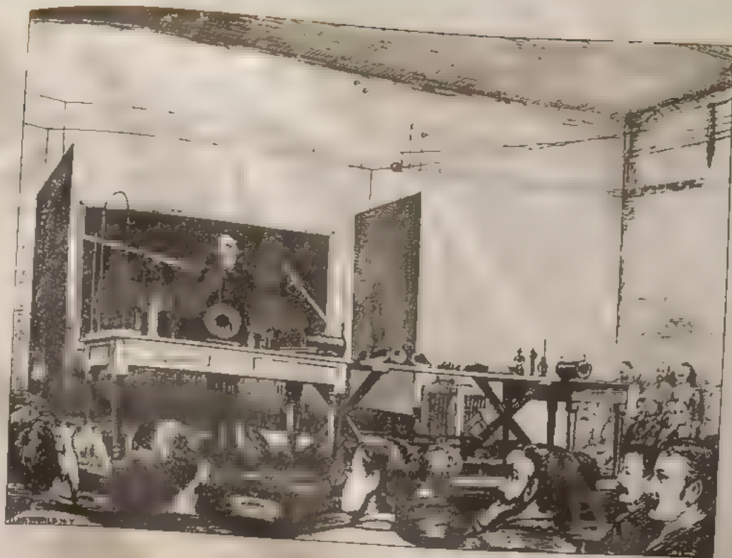
Gano Dunn assisted Tesla at his historic lecture before the AIEE at Columbia University, May 20, 1891, "Experiments with Alternate Currents of Very High Frequency and Their Application to Methods of Artificial Illumination." Attendance at this lecture included a veritable "Who's Who" of electrical pioneers: Prof. W. A. Anthony, H. Ward Leonard, E. W. Rice, Jr., Frank J. Sprague, William Stanley, Elihu Thomson, Edward Weston, Schuyler S. Wheeler, J. G. White, E. A. Sperry, and Prof. George Forbes. This contact, wrote Dunn to Tesla 40 years later, "left an indelible impression and an inspiration which has influenced my life."

Dr. Robert Millikan, Prof. John B. Whitehead, Major Edwin Armstrong, Dr. E. F. Northrup, Count von Arco, Andre Blondel, Jonathan Zenneck, D. McFarlan Moore, Charles F. Scott, are among others who have publicly acknowledged a similar debt.

Thomas C. Martin's book, "Inventions, Researches and Writings of Nikola Tesla," published in 1894, was often the main source of stimulation. Of this, Armstrong wrote at the time of Tesla's death in 1943, ". . . one can imagine the inspirational effect of the book forty years ago on a boy about to study the electrical art. Its effects were profound and decisive." In 1894, Moore—who later developed one of the earliest practical tube lights, the Moore Light—told T. C. Martin that this book would still be a classic a hundred years hence.

In 1931, when Tesla was turning 75, it was my privilege to collect letters of birthday greetings from pioneers in radio and electrical engineering from all over the world. Dr. B. A. Behrend and Prof. Charles F. Scott were co-sponsors of this little gesture of affection and esteem, and 14 past presidents and more than 50 members of the AIEE took part.

Many of the letters gave further evidence of the role of Tesla's brilliant pioneering efforts in inspiring the later practical developments of others. Dr. Northrup told how, as a boy in 1893, he was thrilled by a Tesla demonstration at the Franklin Institute, and how in 1916, when he was searching for a new method for melting metal electrically, he had turned back to Tesla's ideas. Using these ideas,



Reprinted from Electrical World, July 11, 1891

Fig 3. Nikola Tesla lecturing before the AIEE at Columbia University, May 20, 1891.

Northrup developed his high frequency induction furnace

Prof. André Blondel wrote from Paris "In 1892 I had the pleasure of assisting at the public demonstration you gave to the Société Francaise des Electriciens which united about you all the notables of French science and electrical engineering From this demonstration and from your remarkable publications preceding it there was born the development of high frequency currents in various fields and particularly the medical field thanks to the beautiful researches of Prof. d'Arsonval"

John Hays Hammond, Jr, while still a student at Yale, knew Tesla and was inspired by Tesla's wirelessly controlled boat. Later, Hammond established a research organization in which he spent more than 20 years creating and developing radio-controlled devices for ships, airplanes, and missiles many of which are incorporated in guided missiles of today Hammond spoke of Tesla as "the poet of science of our generation"

SHARED FAME WITH EDISON

At the turn of the century, Tesla and Edison were, without doubt, the most famous electrical men in the world Of the two, opinion was sharply divided as to which was the greater. In 1894, in the *New York World*, Arthur Brisbane wrote about Tesla's "wonderful discoveries" under the headlines "Our Foremost Electrician Greater Even than Edison." In 1895, Charles A Dana wrote editorially in the *Sun:* "It is not in any degree an exaggeration to say that the men living at this time who are more important to the human race than this young gentleman can be counted on the fingers of one hand, perhaps on the *thumb* of one hand"

Tesla's personal lecture-demonstrations which he gave before the AIEE, the Franklin Institute, the National Electric Light Association, the Royal Institution, the Institution of Electrical Engineers in London, and so on—were world renowned. After his lectures in England and France, in 1892, the *Electrical World* spoke of "the laurels still fresh that were accorded him by the savants abroad, the equal of which have been accorded to no one before while living." His lecture before the National Electric Light Association in St. Louis, in 1893, had to be moved from the regular meeting place of the association to the Grand Music Hall, seating 5,000 Complimentary tickets were sold at $4 and $5 each, 4,000 programs, containing biographical sketches of Tesla, were sold on the streets

In Europe, Tesla's fame has never diminished Celebrations of Tesla anniversaries have been held in England, France, Germany, Austria, and Yugoslavia Several books about his achievements have been published in German. Yugoslavia, the land of his birth, has established a Tesla Institute for scientific research and a Tesla Museum in which is housed all his personal papers and other belongings.

After Tesla's death, the British Institution of Electrical Engineers arranged a memorial lecture at which Dr A P M Fleming recreated some of Tesla's classic demonstrations At the end, Dr W H. Eccles, himself a noted engineering pioneer, said he "had been driven to the conclusion that Tesla was the greatest electrical inventor we have had on our role of membership; in fact we might go so far as to say that he was the greatest inventor in the realm of electrical engineering"

Commemorations by the AIEE, the Institute of Radio Engineers, universities, the press, radio, and television are this year expressing some of the gratitude and esteem of America the country Tesla officially adopted in 1891 and in which he lived to do all his great work.

Dr E F W. Alexanderson, one of the most noted pioneers in electric power engineering still with us, wrote me a year ago "We think of Tesla's contribution much oftener than that of Ampere and Ohm, although their names have become part of the language . . the induction motor and our power system are enduring monuments to Nikola Tesla."

As this is being written, word comes that Tesla's name has just been added to those of Ohm and Ampere At its meeting in Munich, June 29-July 7, the International Electrotechnical Commission agreed formally to adopt the name "Tesla" for the unit of magnetic flux density in the MKS or Giorgi system.

A reprint from **ELECTRICAL ENGINEERING** [illegible]
American Institute of E[illegible]
[illegible] and reprinted [illegible]
The Institute assumes no responsibility [illegible] opinions made by
contrib[illegible] Pr[illegible] the United States of America

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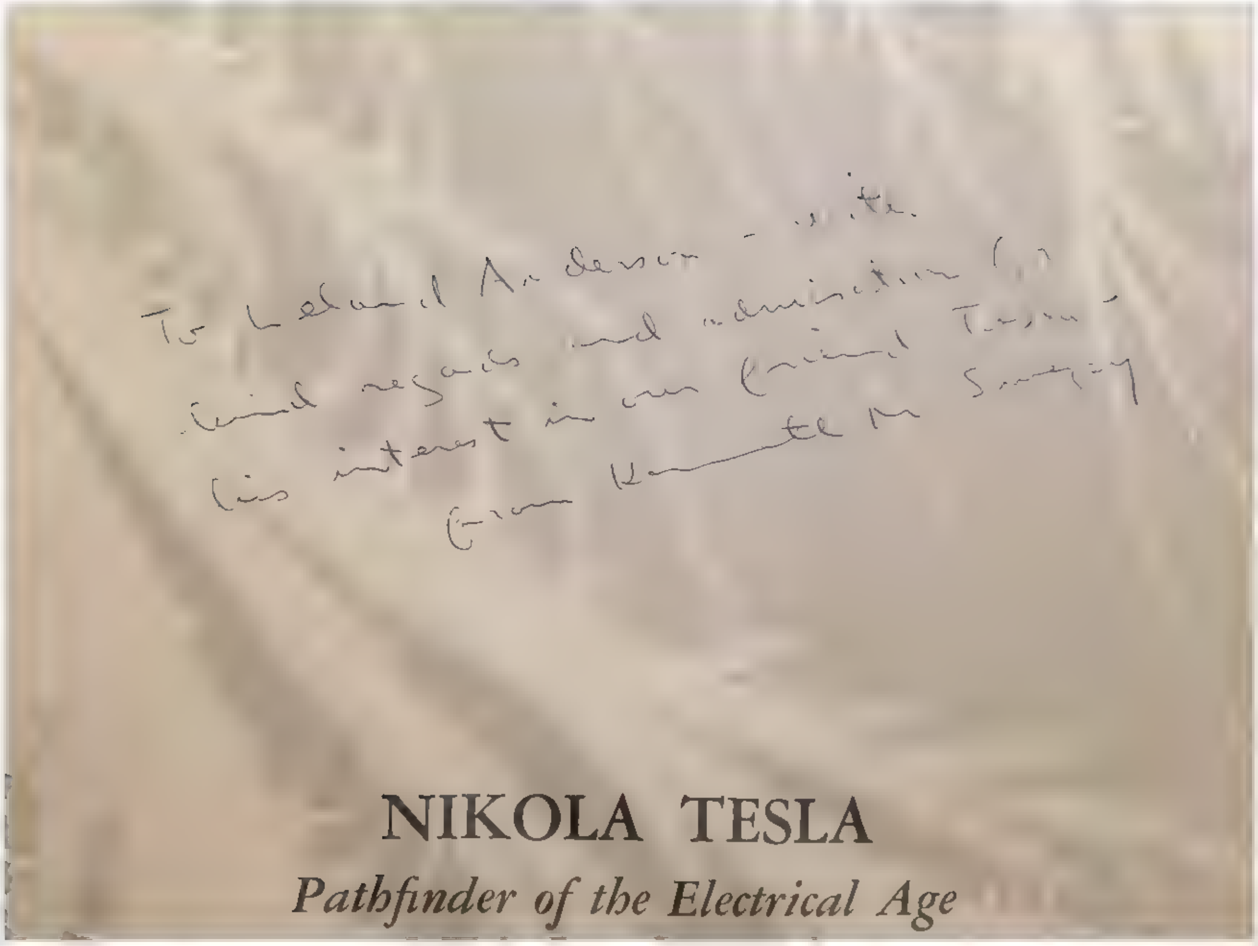
Reprinted from Electrical World, July 11, 1891

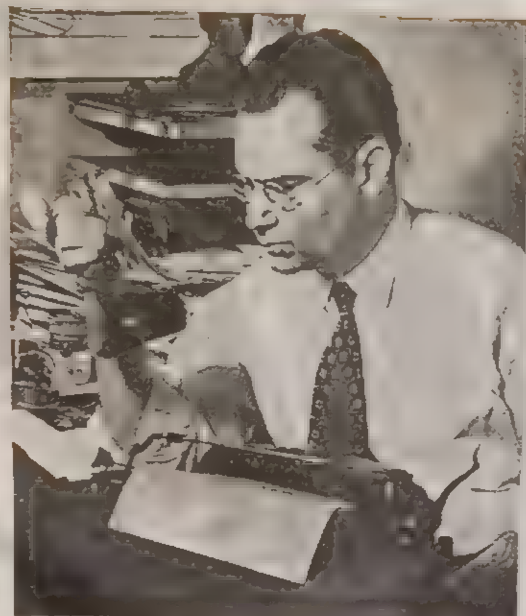
Fig. 3. Nikola Tesla lecturing before the AIEE at Columbia University, May 20, 1891.



To Leland Anderson — with kind regards and admiration for his interest in our friend Tesla — from Kenneth M Swezey

NIKOLA TESLA

Pathfinder of the Electrical Age



Kenneth Swezey has the knack of simplifying science for the layman. Based on experiments he has performed himself, his articles and photographs in LIFE, THE SATURDAY EVENING POST, COLLIER'S, and popular science magazines have been praised for their accuracy and popular appeal. His science interests began at nine when he built a wireless receiving set; later he set up a chemical lab in the kitchen, buying his supplies at the local drugstore. When he was eleven, he sold his first science article. In the last 22 years, Mr. Swezey has written 1500 articles which have appeared in various newspapers and magazines.

From: After Dinner Science (1948)

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The S. S. United States, after breaking transatlantic speed records, arrives at her home port of New York, N. Y. The ship is a triumph in marine engineering and planning. Largest and fastest passenger vessel ever built in this country, the S. S. United States is the first luxury liner conforming to the standards of the United States Navy. She can be converted, if necessary, to carry about 14,000 troops.

other clouds, or to look at the ground ahead and below his airplane.

The vertical fan position is used for navigation and shows a picture of the ground up to a distance of 200 miles ahead of and to either side of the aircraft.

The equipment is also designed to supplement landing approach equipment by picking out airfields and, under certain conditions, runways. In addition, it provides the pilot with a visible check of the other landing and approach instruments in the airplane, and with any directions that he may receive by radio from ground approach officers.

The antenna is mounted on a special platform which can be controlled by a gyroscope to remain stationary, so that the signal is not distorted by the airplane's pitch and roll. This means that while the aircraft maneuvers, the pilot still receives a true picture of the ground and air ahead, even though his airplane may be momentarily off course.

S. S. United States Equipped With Latest Navigational Aids

The S. S. *United States* has been provided with the most modern version of every [illegible] navigational aid intended to facilitate the navigation and handling of the ship and to promote the safety of the ship, its passengers, and its crew. As an additional safety measure practically all the equipment necessary to na[illegible]

orders dealing with its operation is installed in duplicate.

One of the most unusual features of the *United States* is its all-aluminum radar mast, on which are located the two antennas for the ship's electronic eyes. These radar units, which may be operated singly or simultaneously, on long or short range, will enable the ship to sail safely through fog and darkness. The ship is equipped with an echo-depth sounder for calculating the depth of the water. A gyro-pilot enables the ship to be steered automatically with no help from the helmsman should it be necessary to do so.

As well as being equipped with regular electric telephones, the *United States* is provided with many others that are sound-powered. These sound-powered telephones require no batteries or other outside power sources and are actually operated directly by the voice speaking into the mouthpiece. They operate with efficiency even in the high noise level of an engine room and insure uninterrupted communication during any emergency. A telephone is installed in each stateroom in all three classes.

The opened or closed position of each of the ship's many watertight doors and fire-screen doors is indicated on a panel located in the damage control station, and the damage control officer may, if the need arises, close individual or all watertight or firescreen doors from this location.

Ship's service power aboard the *S. S. United States* is alternating current. Experience obtained in the design of large naval vessels and some commercial tankers demonstrated that the overall weight of a. c. plant would be considerably less than d. c. plant and that many thousands of pounds would be saved in the weight of cable for the electric power distribution systems because of the reduction in size of copper conductors and in the reduced weight of motors, generators and other equipment, with consequent [illegible] in the use of critical materials. Another important advantage of the use of alternating current is the lesser maintenance required for a-c squirrel-cage induction motors.

There are some motor-driven auxiliaries installed on the *United States* which do not lend themselves to a-c power because of the inherent lack of simple wide-range speed control for a-c motors. Therefore, certain auxiliaries requiring a fine degree of speed control are direct current, but these represent a very small percentage of the total motor installation.

In order to provide some illumination throughout the vessel, and to operate certain damage-control power equipment in the event of failure of all or part of the ship's service electric generating plant or distribution system, a completely separate emergency power supply and distribution system has been installed. Under normal operation electric power for the emergency system is obtained from the ship's service generators through the emergency generator switchboard, but in the event of shutdown of the ship's service generators the source of power is [illegible] transferred to the emergency generating plant. The emergency [illegible] generators will start automatically upon failure of ship's [illegible]

NIKOLA TESLA ELECTRICAL GENIUS.
THE GREATEST FORGOTTEN NEW YORKER

by
Julian Tebo
Tesla Symposium Committee
New York City Bicentennial

New York City Bicentennial [redacted] is plannin[illegible] dedicate two symposiums* in the Bicentennial celebrations program to honor the work and life of a great New Yorker and an inventor discoverer of unrivalled greatness. Nikola Tesla despite his fundamental discoveries that made contemporary electric power generation and transmission possible and practical througnout the world, and despite his original ideas in high frequencies that revolutionized the foundations of radio communications and radar —has become almost the forgotten man. In his 87th year, Nikola Tesla died as he had lived -alone in a room of the New Yorker Hotel. He was found the next day, January 8 1943, by a maid who, fearing that all was not well, risked his displeasure and entered his room.

[redacted] Listed among Tesla's honorary pall bearers were David Sarnoff, President of RCA, Ernst Alexanderson, G. E. Inventor, Professor Edwin Armstrong, of Columbia University, and Gano Dunn, President of J.G. White Corporation. But the only people seen were Alexanderson; the Honorary Consul to New York of Yugoslavia's government in exile; and the late Kenneth M. Swezey, a scientific writer who had maintained a long acquaintanceship with Tesla and remained his closest friend. In a letter to the then Secretary of the Institute of Radio Engineers, Swezey wrote, "I learned [illegible] his death early the following morning, and got to the hotel before he had been removed from bed. He had wasted away terribly during the last few years of his life ... I was the only personal friend who accompanied Tesla's remains to the cemetery."

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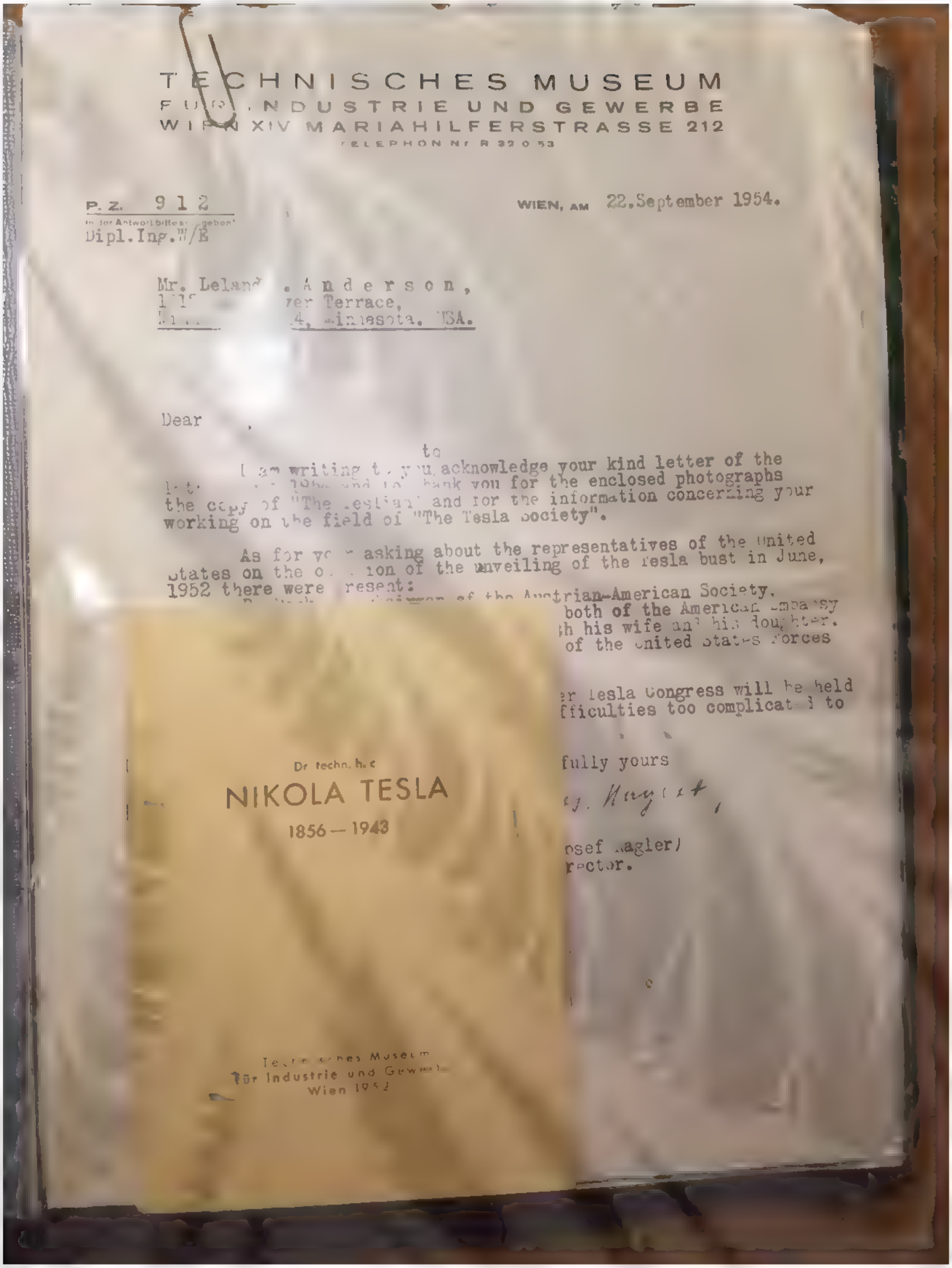
TECHNISCHES MUSEUM
FÜR INDUSTRIE UND GEWERBE
WIEN XIV MARIAHILFERSTRASSE 212
TELEPHON Nr R 32 0 53

P. Z. 912
In der Antwort bitte anzugeben!
Dipl.Ing.N/E

WIEN, AM 22.September 1954.

Mr. Leland . A n d e r s o n ,
[illegible] Terrace,
[illegible] 4, Minnesota. USA.

Dear [illegible],

I am writing to you to acknowledge your kind letter of the [illegible] and to thank you for the enclosed photographs the copy of "The Teslian" and for the information concerning your working on the field of "The Tesla Society".

As for your asking about the representatives of the United States on the occasion of the unveiling of the Tesla bust in June, 1952 there were present:
[illegible] of the Austrian-American Society,
[illegible] both of the American Embassy
[illegible] with his wife and his doughter.
[illegible] of the United States Forces

[illegible] Tesla Congress will be held
[illegible] difficulties too complicated to

[illegible] fully yours

[illegible] Nagler,

[illegible] Josef Nagler)
[illegible] rector.

Dr techn. h. c
NIKOLA TESLA
1856 — 1943

Technisches Museum
für Industrie und Gewerbe
Wien 1952

TECHNISCHES MUSEUM
FÜR INDUSTRIE UND GEWERBE
WIEN XIV. MARIAHILFERSTRASSE 212
TELEPHON Nr R 32 0 3

P. Z. 912
In der Antwort bitte anzugeben!
Dipl.Ing.W/E

WIEN, AM [illegible] September 1954.

Mr. Leland I. A n d e r s o n,
1615 East River Terrace,
Minneapolis 14, Minnesota, USA.

Dear Sir,

I am writing to you/acknowledge your kind letter of the 18th August 1954 and to thank you for the enclosed photographs the copy of "The Teslian" and for the information concerning your working on the field of "The Tesla Society".

As for your asking about the representatives of the United States on the occasion of the unveiling of the Tesla bust in June, 1952 there were present:

Dr.Denk the chairman of the Austrian-American Society.

Mr. F.M. Rush and Dr. Spaulding both of the American Embassy in Vienna and a certain Dr. Lederer with his wife and his doughter.

The band of the Rainbowdivision of the United States Forces for Austria was as well present.

I am sorry to say that no further Tesla Congress will be held in Vienna as there are a great many difficulties too complicated to be explained in this letter.

Faithfully yours

Jos. Nagler

(Dr. Josef Nagler)
Director.

4 photographs.

[illegible] FÜR INDUSTRIE UND GEWERBE
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[illegible]EN, XIV., MARIAHILFERSTRASSE 212
FERNRUF: R 32-0-53

WIEN, February 10th, 1954

[illegible]geber

To
Leland I. Anderson,
1[illegible] Seymour Avenue Southeast
Minneapolis 14, Minnesota
U.S.A.

Dear Sir,

From your letter of September 14th, 1953, I have learned with great interest that under your supervision an organization - the "Tesla International" - has been initiated and founded, in honourable commemoration of Tesla's life and appreciation of his great scientific achievments.

With the same idea in mind, I have already in the year 1952 arranged the erection of the Nicola Tesla's bust, a work of Professor Ivan Meštrović, in the Technical Museum, and have taken all possible care that the unveiling be performed in connection with a proper commemoration [illegible], which was attended also by representatives from U.S.A. In the inauguration speech and address of the day, issued as printed publication, I have referred to Tesla's life and his work and pointed out the Tesla-Congress to be held every year. Report of this celebration is printed in booklet 14 of the "Blätter für Technikgeschichte"-series.

In the year of the 10th anniversary of Tesla's death, in the time from September [illegible]th until 13th, the first International Tesla Congress was held. The lectures delivered at this occasion were permeated by the great genius of Nicola Tesla and were of the highest academic

commemoration

[illegible] sla's bust, i.e., t [illegible]

[illegible] geschichte" with a f [illegible]

as well as the program, together with [illegible]

Tesla Kongress", furthermore booklet [illegible]

Technikgeschichte"-series, converning [illegible]

are sent to you under separate cover.

It would be much appreciated if a [illegible] these publications, as edited and issued by [illegible] Museum could be acquired by the "Tesla-Inter[illegible] the purpose of further destribution, as long [illegible] stocks permit it, since in view of the very high repri[illegible] costs, a new edition of these publications will hardly be possible in the near future.

I would be very much obliged to be kept i[illegible] [illegible]t the activities and the progress of the socie[illegible] "Tesla International", and if you could, as soon as possible, [illegible]r the desired number of respective copies.

I[illegible] anticipation of your further communication,

I remain

Very truly yours

[illegible]

[illegible] T.H. [illegible]-Ko[illegible]"

TECHNISCHES MUSEUM
FÜR INDUSTRIE UND GEWERBE
IN WIEN
XIV, MARIAHILFERSTR. 212

Mr.

Leland I. A n d e r s o n

University Station Box 135

Minneapolis 14, Minnesota

United States of America

Dr. techn. h. c.

NIKOLA TESLA

1856 — 1943

Technisches Museum
für Industrie und Gewerbe
Wien 1952

Dr. techn. h. c.

NIKOLA TESLA

1856 — 1943

Technisches Museum
für Industrie und Gewerbe
Wien 1952

Technisches Museum
für Industrie und Gewerbe

Printed in Austria

Druck: Alois Mally & Co., Wien V

Festrede anläß
Tesla-Büste im T
und Gewerbe in
tor Dr. Josef Nag

Hochansehn

Wir haben uns
die Büste eines M
genialsten Mensch
Nikola Teslas, die
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jugoslawischen Re
aus Anlaß des
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träger war, obwoh
auf den die Welt
den drei Staaten
weil Tesla als Alt
Österreich gehörig
Kroatien, im Jahr
alten österreichisch
und Prag, studiert
Doktor der technis
ernannt wurde u
tätig war; Jugoslav
ort Teslas jetzt zu

United States

Museum Wien XV.
Quellenangabe

Festrede anläßlich der Enthullung der Nikola Tesla-Buste im Technischen Museum fur Industrie und Gewerbe in Wien, gehalten von dessen Direktor Dr. Josef Nagler am 29. Juni 1952.

Hochansehnliche Festversammlung!

Wir haben uns heute hier zusammengefunden, um die Büste eines Mannes zu enthüllen, der einer der genialsten Menschen unserer Zeit war. Die Buste Nikola Teslas, die der berühmte jugoslawische, in Amerika lebende Bildhauer Ivan Mestrovic modelliert hat, die in Zagreb gegossen wurde und von der jugoslawischen Regierung dem Technischen Museum aus Anlaß des im nächsten Jahr stattfindenden Internationalen Nikola Tesla-Kongresses gewidmet hat, die Büste eines Mannes, der zwar kein Nobel-Preisträger war, obwohl er es mehrfach verdient hatte, auf den die Welt aber stolz sein kann. Ein Mann, den drei Staaten für sich reklamieren. Österreich, weil Tesla als Alt-Österreicher in einem damals zu Österreich gehörigen Orte, Smiljan, Provinz Lika, Kroatien, im Jahre 1856 geboren wurde, in der alten österreichisch-ungarischen Monarchie, in Graz und Prag, studierte, in Wien im Jahre 1908 zum Doktor der technischen Wissenschaften ehrenhalber ernannt wurde und in Ungarn wissenschaftlich tätig war; Jugoslawien deshalb, weil der Geburtsort Teslas jetzt zu diesem Staate gehört; und nicht

zuletzt das Land der unbegrenzten Möglichkeiten, die Vereinigten Staaten von Nordamerika, die seinem Genie die Gelegenheit boten, sich erst richtig zu entfalten, da die wirtschaftlichen Voraussetzungen für die Verwirklichung der Ideen Teslas in keinem anderen Lande so gegeben waren wie dort. Tesla hat die Treue zu seiner Heimat zeitlebens bewahrt und war auch fern von ihr gern mit seinen Landsleuten beisammen, er blieb auch in der neuen Welt ein Kind seines Geburtslandes.

Es ist schwer, mit wenigen Worten diese einzigartige Persönlichkeit zu schildern, bei der das Schaffen von seinem Leben nicht so leicht getrennt werden kann, weil man nur so seine wissenschaftlichen Erfolge wie auch seine finanziellen Mißerfolge verstehen kann. Er war Techniker und zugleich Idealist. Die Technik war ihm ein Mittel, soziale Ziele zu erreichen, der Menschheit zu helfen. Dieser Technik hatte er sich verschworen und seine Liebe zu ihr ging so weit, daß er ihr seine ganze Kraft widmete und sich deshalb vom weiblichen Geschlechte fernhielt, da er der Meinung war, daß er, falls er geheiratet hätte, in seinem Schaffen gehindert worden wäre. So lebte er nur für sich bescheiden zurückgezogen, bald hier, bald dort, praktisch immer ohne eigene Wohnung. Wohnen und Schlafen waren für ihn nur unangenehme Notwendigkeiten des menschlichen Daseins. Forschen und Entwickeln waren seine Leidenschaften. Ihnen opferte er seine Nachtruhe, sein Geld und bisweilen

auch seine Gesundheit. Man kann nicht behaupten, daß er eine kräftige Konstitution sein eigen nennen durfte. Als Kind und auch noch in jungen Jahren, war er oft nahe daran, sein Leben frühzeitig zu beenden. Die Krankheiten, die Tesla mitmachte, waren eigener Art. Es scheint fast so, als ob seine Nerven durch seine intensive Gedächtnisarbeit wie Vampyre seinen Körper ausgesaugt hätten, und daß allein seine gute Erbmasse immer wieder den Sieg über alle Erkrankungen davongetragen hat. So wuchs Tesla von vielen Krankheiten geplagt heran, alle Alterskollegen an Intelligenz weit überflügelnd. Sein sehnlichster Wunsch war, Techniker, und zwar Elektrotechniker zu werden. Die Grazer Technische Hochschule, die er besuchte, vermittelte ihm das Wissen seiner Zeit, bereitete ihm aber auch manche Enttäuschung, da er seiner Epoche weit voraus war und – vorerst nur in seinem Unterbewußtsein – die spätere durch ihn geschaffene Entwicklung vorausahnte, ohne jedoch schon im Stande zu sein, seine genialen Ideen bis in die letzten Konsequenzen zu verwirklichen.

Fast wäre er an seiner genialen Idee selbst irre geworden, als man ihm in einer Vorlesung die Unhaltbarkeit seiner Gedankengänge auseinandersetzte. Zwar schwer getroffen durch die mit allen Mitteln der Rhetorik und Logik geführte Widerlegung seiner Ideen, hielt er indes doch in grenzenlosem Selbstvertrauen an ihnen fest. Tesla ging nach Prag und beendete dort 1880 an der Universität

seine Studien. Nun erstrebte er eine Anstellung [illegible] einer bedeutenden Firma, da er der Meinung war, nur in einem ganz großen Unternehmen Verständnis für seine Pläne zu finden. Er ging nach Budapest, aber er mußte dort annehmen, was sich ihm bot; er war ja noch unbekannt – ein Absolvent der Hochschule – sonst nichts in den Augen der [illegible] – ein Anfänger –. Ja, er war ein [illegible], aber ein Wegbereiter einer neuen Epoche der Elektrotechnik. Was Michael Faraday entdeckte, [illegible] baute Tesla aus. Der Wechselstrom hatte es ihm angetan. Schon nach zwei Jahren, im Jahre 1882, gelingt ihm der große Wurf, er entdeckt das Drehfeld. Wieder einmal erfaßt Tesla ein [illegible] technischen Begeisterung, ekstatische [illegible] weiß, er hat recht. Die Firma aber [illegible] arbeitete, wurde verkauft, und Tesla [illegible] filiierten Unternehmen nach Paris. Er setzte [illegible] Hoffnungen auf Paris; dort, meinte er, sei die [illegible] wo man für seine Ideen empfänglicher sein [illegible] von wo aus sich die Erfindung in alle Welt [illegible] breiten konnte. Statt aber an seinem Drehfeld [illegible] ten zu können, mußte er sich bei der [illegible] Edison Company dem Gleichstrom [illegible] reparierte Gleichstrommaschinen und [illegible] wurde sehr bald Entstörer. Er konstruierte [illegible] tische Regler, half der Firma in schwierigen [illegible] tionen, hatte aber keinen Dank. [illegible] für sie tätig war, konstruierte er [illegible] und [illegible] Zweiphasen-Wechselstrom

motor. Es war für ihn einer der erhebensten Momente seines Lebens als der Motor, vom Generator gespeist, sich zu drehen begann, und als er die Umlaufrichtung des Drehfeldes änderte, sich in entgegengesetztem Sinne drehte. Tesla war damals erst 27 Jahre alt; er hielt eine Vorführung seiner Erfindung vor dem Straßburger Bürgermeister und den Straßburger Finanzleuten ab. Erfolg gleich Null. – Nach Paris zurückgekehrt, erlebte er neue Enttäuschungen; man prellte ihn um sein gutes Recht. Obwohl Tesla das Geld nur als ein notwendiges Übel der Zivilisation betrachtete, war er von solchem Verhalten angewidert und kündigte seine Stellung.

Nun blieb ihm noch Amerika übrig. Dort hoffte er, für seine Ideen einen guten Boden vorzufinden. Aber auch hier hatte er anfänglich mit großen Schwierigkeiten zu kämpfen. Er kam mit Thomas Alva Edison zusammen. Doch diese zwei so genialen Köpfe waren grundverschieden in ihrem Wesen. Edison war Erfinder und gleichzeitig guter Kaufmann – Tesla war Entdecker, Erfinder und Idealist. Die Bekanntschaft, von einer Freundschaft kann man wohl nicht reden, dauerte nicht lange. Tesla zog sich zurück, und es war gut so für ihn, denn sein Genie konnte sich erst jetzt richtig ungehindert entfalten, gemäß dem Spruch: „Es bildet ein Talent sich in der Stille, sich ein Charakter in dem Strom der Welt.“ Tesla wurde arbeitslos und verdiente sich als Gelegenheitsarbeiter, ja sogar als Erdarbeiter, seinen kärglichen Lebensunterhalt. Aber

wie [illegible] Ratschluß Gottes nichts von ungefähr [illegible]
sollte auch diese Tätigkeit ihn weiterbringen. E[illegible]
Vorarbeiter der Erdarbeiter, dem er sein „[illegible]
[illegible] Herz" ausgeschüttet hatte, führte ihn [illegible]
A. K. Brown der Western Telegraph Company
[illegible]. Brown sowie der Vorarbeiter opferten sogar [illegible]
erspartes Geld für Teslas Pläne. Aus dieser Bekannt-
schaft mit Brown entstand die Tesla Electric Com-
pany in der South Avenue 33–35 am heutigen West
Broadway. Damit aber entbrannte der große K[illegible]
Gleichstrom — Wechselstrom, der zwar kein [illegible]
zipieller, sondern ein finanzieller Kampf war. Edison
war ein aus geschäftlichen Gründen eingeschwore-
ner Anhänger des Gleichstromes, Tesla des W[illegible]
selstromes. Tesla konstruierte in seiner F[illegible]
Einphasen-, Zweiphasen-, Dreiphasen-Gener[illegible]
und -Motoren und legte seinen Konstrukt[illegible]
exakte Berechnungen zugrunde. Professor W[illegible]
Anthony von der Cornell Universität dokument[illegible]
in seinem Gutachten über Teslas Zweiphasenmot[illegible]
daß derselbe einen Wirkungsgrad aufweise, der de[illegible]
besten Gleichstrommotoren gleichkomme. Durch d[illegible]
Patentanwälte Duncan, Curtis und Page hatte Tes[illegible]
am 12. Oktober 1887 sein grundlegendes Patent [illegible]
dem Gebiete des Drehstromes angemeldet. Obw[illegible]
er schon vielen sein System erklärt hatte, hatte
glücklicherweise dieses Wissen niemand zu [illegible]
Schaden ausgenützt, da keiner geistig noch so w[illegible]
war und die geschäftliche Chance des Wechsel[illegible]
systems erkannt hatte. Tesla ist damit der Vater de[illegible]

Drehstromes gewo[illegible]
Patentamt zu neu[illegible]
[illegible] ca. 30 Patente[illegible]
dem American In[illegible]
New York, der de[illegible]
von Wechselstrom[illegible]
weltberühmt gewo[illegible]
pany hatte sofort [illegible]
systems erkannt un[illegible]
richte. Tesla arbei[illegible]
Ein großes Stück se[illegible]
vollendet.

Wieder zog es [illegible]
stellung in Paris bo[illegible]
heit und von hier [illegible]
er fernab von dem[illegible]
[illegible] seinen woh[illegible]
Geburtsorte verbrac[illegible]
gekehrt, arbeitete T[illegible]
seines Wechselstrom[illegible]
man auch in Gesel[illegible]
des Wechselstromes [illegible]
Hatten doch die vo[illegible]
verteilungsanlagen [illegible]
[illegible]fälle in den Leit[illegible]
[illegible]schte 110 Volt[illegible]
schlechtes Licht. W[illegible]
möglichst verkleiner[illegible]
tungsquerschnitte fü[illegible]
legen. Dies ergab ab[illegible]

Drehstromes geworden. Seine Erfindung war dem Patentamt zu neu und zu umfassend, weshalb er sie auf ca. 30 Patente aufteilen mußte. Sein Vortrag vor dem American Institute of Electrical Engineers in New York, der den Titel trug: „Ein neues System von Wechselstrommotoren und -transformatoren“ ist weltberühmt geworden. Die Westinghouse Company hatte sofort die Vorteile des Wechselstromsystems erkannt und erwarb Teslas sämtliche Patentrechte. Tesla arbeitete jetzt in dieser Gesellschaft. Ein großes Stück seines Lebenswerkes hatte er damit vollendet.

Wieder zog es ihn nach Europa. Die Weltausstellung in Paris bot ihm eine willkommene Gelegenheit und von hier aus fuhr er in seine Heimat, wo er fernab von dem Getriebe amerikanischer Großstädte seinen wohlverdienten Urlaub in seinem Geburtsorte verbrachte. Nach New York zurückgekehrt, arbeitete Tesla intensivst an dem Ausbau seines Wechselstromprojektes. Immer mehr erkannte man auch in Geschäftskreisen den großen Vorteil des Wechselstromes und seines Verteilungssystems. Hatten doch die von Edison erbauten Gleichstromverteilungsanlagen allerlei Nachteile: Spannungsabfälle in den Leitungen, dadurch nicht die gewünschte 110 Volt Netzspannung, infolgedessen schlechtes Licht. Wollte man den Spannungsabfall möglichst verkleinern, so mußte man große Leitungsquerschnitte für die Stromzuführungen verlegen. Dies ergab aber ein teures Leitungsnetz. Bei

Wechselstrom war es anders, denn diesen Strom konnte man transformieren und das Produkt aus Strom und Spannung blieb praktisch konstant. Man konnte mit hohen Spannungen bei kleinen Strömen dasselbe erreichen wie mit niedrigen Spannungen und mit hohen Strömen. Die niedrigen Ströme bei hohen Spannungen brauchten aber nur einen kleinen Leitungsquerschnitt, waren somit wirtschaftlicher. Auch war man für die Erzeugung der Energie bei der Verwendung von Wechselstrom nicht mehr an die Nähe des Verbrauchers gebunden, man konnte fernab von der Verbrauchsstelle eine vorhandene Wasserkraftenergiequelle zur Wechselstromerzeugung heranziehen, den hochgespannten Wechselstrom mittels Leitungen kleinen Querschnittes bei niedriger Stromstärke über weite Strecken führen und ihn dann an der Verbrauchsstelle auf die niedrige Verbraucherspannung bei großer Stromstärke herabtransformieren. Das Elektrizitätswerk war damit nicht mehr ortsgebunden.

Der Besitzer der Westinghouse Electric Company in Pittsburg erkannte die kommerziellen Aussichten des Teslaschen Wechselstromsytems und bot Tesla eine Million Dollar für die nunmehr auf die Zahl [illegible] angewachsenen Teslaschen Wechselstrompatente. Tesla war damit einverstanden, jedoch unter der Bedingung, daß ihm für jedes PS erzeugter Wechselstrommaschinen und -motoren 1 Dollar Lizenz bezahlt wurde. Leider konnte er sich mit den [illegible] meuren der Westinghouse Company nicht [illegible]

den, da diese auf seine wohlüberlegten Ratschläge nicht eingehen wollten. Er verließ verärgert Pittsburg und arbeitete wieder allein weiter. Westinghouse war mittlerweile durch Finanzmanöver der Gegner in große finanzielle Schwierigkeiten geraten. Vertragsgemäß hätte Westinghouse an Tesla Lizenzgebühren in der Höhe von ca. 12 Millionen Dollar zahlen müssen, was ihm in der damaligen Situation unmöglich war. Tesla jedoch verzichtete in dankbarer Erinnerung daran, daß Westinghouse der einzige war, der ihn richtig erkannt hatte und der dem Wechselstromsystem die Bahn eröffnete, mit großherziger, nobler Geste auf die Zahlung der 12 Millionen Dollar und auf jede weitere Zahlung von Lizenzgebühren. Diese Tat findet nicht ihresgleichen in der Geschichte. Für Tesla sank somit die Hoffnung, von Geldsorgen verschont zu sein. Denn die seinerzeitige Million blieb ihm auch nicht, da er die Hälfte an seine Finanziers, u. a. A. K. Brown, refundieren mußte.

Von neuem begann Tesla seine wissenschaftliche Tätigkeit. Wieder reihte sich Erfindung an Erfindung. Er widmete sich jetzt der Hochfrequenztechnik. Bei seinen Forschungen auf dem Gebiete des Drehstromes war es ihm gelungen, Frequenzen von 10 000 Hz zu erzeugen, er erkannte sofort, daß er hier ein Gebiet betrete, das zu großen Erfolgen führen werde. Er entwickelte die eisenlosen Transformatoren für diese hohen Frequenzen, da er den schädlichen Einfluß des damaligen Eisens in den

Transformatoren für hohe Frequenzen erkannte. Er baute auch Öltransformatoren und legte damit den Grund für die heutige Entwicklung der Hochspannungstransformatoren, wie sie [illegible] kleiner Hochspannungstrafos für transportable Röntgenapparate ermöglichen, bei denen sich in einem geerdeten, mit Öl gefüllten Behälter der Hochspannungstransformator und die Röntgenröhre befinden. Tesla machte bereits den Vorschlag, Uhrwerke mittels konstanter Frequenz als Synchronuhren zu betreiben. Er beschäftigte sich mit dem Prinzip der Resonanz in Wechselstromkreisen und dehnte seine Versuche von der Niederfrequenz auf die Hochfrequenz aus. Er konstruierte die berühmt gewordenen Tesla-Spulen, die noch immer im Physikunterricht die Schüler begeistern. Bereits 1890 hatte er die Wärmewirkung der Hochfrequenzströme entdeckt und wenn heute mit Diathermie behandelt wird, so hat Tesla auch dazu schon den Grund gelegt. Teslas Vorträge zählten zu den interessantesten Erlebnissen für die Fachwelt: seine experimentelle Geschicklichkeit, seine kühnen Gedanken ließen die Zuhörer immer neue Sensationen erleben. Immer boten seine Vorlesungen Neues. In New York, in London, in Paris, überall größte Erfolge. Im Jahre 1893 durfte er es erleben, daß die Weltausstellung, die aus Anlaß der 400. Wiederkehr des Jahrestages der Entdeckung Amerikas veranstaltet wurde, mit Wechselstrom nach dem Teslasystem versorgt wurde. Der Wechselstrom hatte den Sie-

vorgetragen
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damaligen Elektr
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anerkannte Tesla al
Mehrphasensystems.
„Electrical Review"
er in großen Zügen se
gen darlegte. 1892 ha
für seine Radioanlag
1893 bis 1898 erwarb
dem Gebiete der He
des Weltrundfunks b
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1899 begann er mit sei
Erri…ung der 200 kW
Die Vorversuche hatten
…tigt und gaben zu
Doch dieses so geniale W
und wurde nie fertiggeste

davongetragen. Eine Auswirkung dieses Erfolges zeigte sich im Niagarafall-Projekt, des größten damaligen Elektrizitätswerkes, das eine Mehrphasen-Wechselstromanlage erhielt. Was Michael Faraday im Jahre 1831 entdeckte, war durch die Arbeiten des kongenialen Tesla zur höchsten Vollendung gebracht worden.

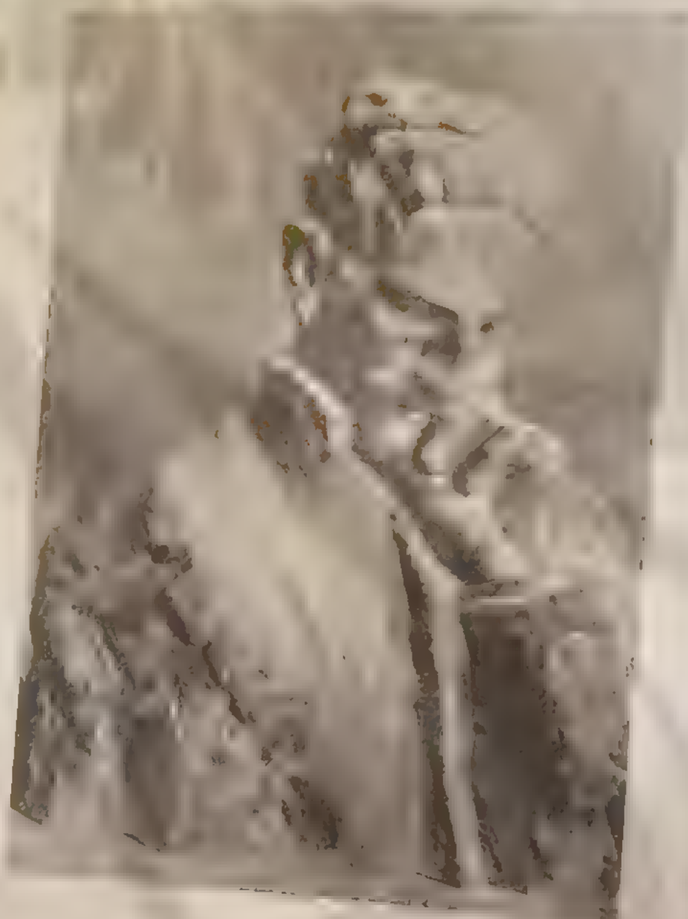
Daß es bei all diesen Erfolgen nicht an Neidern und solchen, die den Ruhm Teslas schmälern wollten, fehlte, ist selbstverständlich. Schließlich aber mußte man doch der Wahrheit die Ehre geben und anerkannte Tesla als den umstrittenen Erfinder des Mehrphasensystems. 1897 erschien in der Zeitschrift „Electrical Review“ ein Interview mit Tesla, in dem er in großen Zügen seine radiotechnischen Entdeckungen darlegte. 1892 hatte er schon die Detektorröhre für seine Radioanlage in Verwendung gebracht. 1893 bis 1898 erwarb er grundlegende Patente auf dem Gebiete der Hochfrequenztechnik. Der Plan des Weltrundfunks beschäftigte ihn längst. Seine reiche Sammlung radiotechnischer, von ihm erfundener Apparate vernichtete ein Brand im Jahre 1895 mit samt allen Plänen. 1898 war er bereits wieder so weit, daß er ein Schiff drahtlos steuern konnte. 1899 begann er mit seinem größten Werk, mit der Errichtung der 200 kW Radiostation in Colorado. Die Vorversuche hatten bereits beste Erfolge gezeitigt und gaben zu großen Hoffnungen Anlaß. Doch dieses so geniale Werk krankte an Geldmangel und wurde nie fertiggestellt. Tesla hatte eben immer

Millionen zur Verfügung haben müssen, dann wären Milliarden daraus geworden. Was wir heute als neu bewundern, ob es das Prinzip des Elektronenmikroskopes ist, ob es stärkste Röntgenstrahlen sind oder die Leuchtstofflampen, die kosmische Strahlung, künstliche Radioaktivität, Todesstrahlen, alles hat Tesla bereits erprobt und zumindestens vorausgesagt. Vielleicht wird viel Neues uns noch zuteil werden, wenn anläßlich des im nächsten Jahre stattfindenden Tesla-Kongresses bisher noch nicht Veröffentlichtes der Allgemeinheit bekannt werden wird.

Was ich hier heute über Tesla zu seiner Würdigung vorbringen durfte, war nur wenig, und dies auch nur in ganz großen Zügen, so daß ich keinen Anspruch darauf erheben darf, Tesla so gewürdigt zu haben, wie er es verdient. So wie ihm auch zeitlebens nie die Ehre zuteil geworden war, die ihm gebührt hätte, da er in seiner Bescheidenheit der Technik und nicht seiner Person zuliebe tätig war.

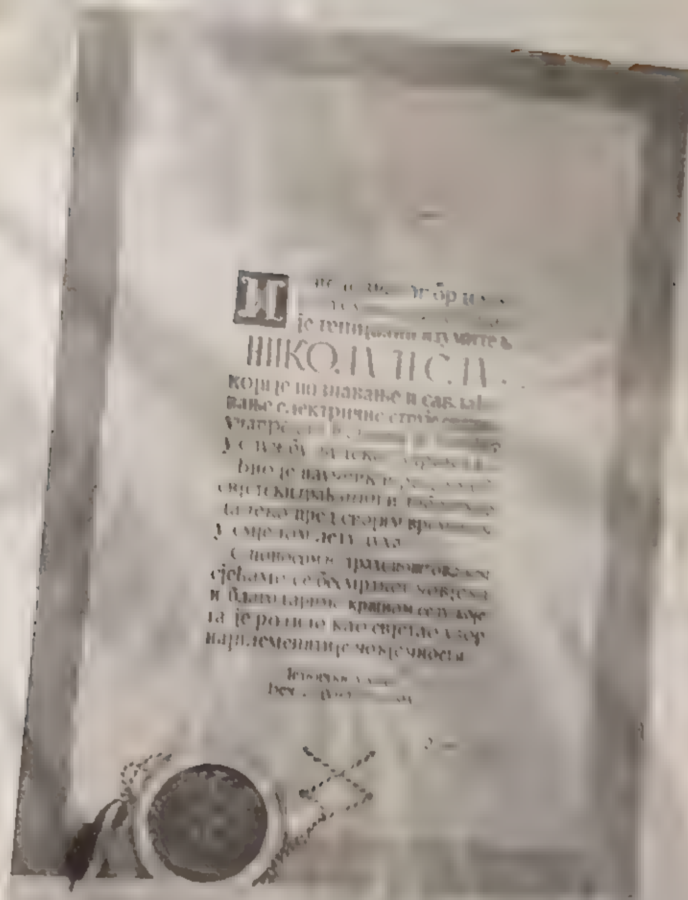
Möge diese Feier und der Kongreß im nächsten Jahre dazu beitragen, dieses einzigartige Genie im rechten Lichte erstrahlen zu lassen.

modelliert von P
Gießerwerkstätte
Technischen Mu
jug



Buste Nikola Tesla

modelliert von Prof. Ivan Mestrovic, gegossen in der Gießerwerkstätte der Zagreber Akademie. Dem Technischen Museum in Wien gewidmet von der jugoslawischen Regierung



Ehrenurkunde des Technischen Museums in Wien für den Geburtsort Nikola Tesla

Deutsche Übersetzung
der vorstehenden Urkunde

Dem unbekannten Bergdorf [illegible] der geniale Erfinder

NIKOLA TESLA

der die Kenntnis und Beherrschung des elektrischen Stromes mächtig förderte und ihn auch der menschlichen Gesundheit dienstbar machte. Er war Gelehrter und Patriot, Weltbürger und Wohltäter, weit voran seiner Zeit im kühnen Flug des Geistes. Mit Stolz und Ehrfurcht gedenken wir des unsterblichen Mannes und danken dem Karstdorf, das ihn gebar als leuchtendes Vorbild edelsten Menschentums.

Technisches Museum
für Industrie und Gewerbe

Wien, 29. Juni 1952

Rede Sr. Magnifizenz Dr. R. Eigenberger anläßlich der Verleihung der Ehrenmitgliedschaft der Akademie der bildenden Künste Wien an Ivan Mestrovic am 14. Dezember 1951. (Gekürzter Text.)

Vor fünfzig Jahren war es gewesen, als der junge Ivan Mestrovic in die Bildhauer-Schule von Professor Edmund Hellmer an unserer Akademie aufgenommen wurde.

Der Überlieferung nach war sein Großvater das erste Oberhaupt der Familie gewesen, das nicht um die Freiheit des Lebens, das Leben hatte opfern müssen. Eisengraue Berge und Felsen über die rauhe Winde streichen, in Tälern und Mulden das geduckte Grün von dürftigem Bauern- und Weideland, und über allem der Himmel des Südens — das ist die Natur, die seine Kindheit umgeben hat. In ihr hat er mit der sehnsüchtigen Neugier seiner jungen Jahre Schaf- und Ziegenherden gehütet und von der Welt und ihren Dingen geträumt. Hier hat er mit der tiefen Religiosität der Menschen, die diese harte Erde trägt, seine Seele gefüllt. Sein Vater, ein Land-

arbeiter und Maurer der [illegible] auch in den [illegible] kindliche Kunstfertigkeit [illegible] Möbel [illegible] oder steinerne Grabkreuze [illegible] erste Erwecker geworden für die [illegible] kindlichen Herzen nach Gestaltung [illegible] seinem arbeitenden Vater [illegible] bei seiner Herde, suchte er Geschautes [illegible] Schnitzmesser nachzubilden. Und während er die Gesänge seiner Heimat von Kampf [illegible] Schlacht und Tod sang, stieg eigenes junges Dichten in ihm auf, das er in die urtümlichen Weisen seines Volkes versenkte. Mit 15 Jahren brachte ihn sein Vater zu dem Steinmetzen Bilinic nach Split, der heute noch als Neunzigjähriger am Leben ist, und Kunde erhält von der Feier, die heute in Wien seinem einstigen Lehrling zu Ehren begangen wird. Hier schaute er zum ersten Mal in die blaue Weite des Meeres, das seine Heimat säumt, und hier suchte er die Weite seines Inneren mit Dingen des Wissens und der Bildung zu füllen. Im Hause eines Schulmeisters hatte er Unterkunft gefunden. Nach rastloser Tagesarbeit saß er hier bis tief in die Nacht hinein über Bücher und Arbeiten, die diese kleine Welt ihm geben konnte. Hier erlebte er manche Anerkennung seiner frühen Begabung; aber auch die ersten Leiden der Enttäuschung.

Mögen es auch glückliche Zufälle gewesen sein, die es dem 16jährigen ermöglicht haben, schon nach einer einjährigen Lehrzeit und Tätigkeit als Bildhauer nach Wien zu kommen, so sind es doch

ebenso die heißen Kräfte seines Herzens und seiner Begabung, die schon so früh Alles in jene Bahnen zu zwingen wußten, die seiner Sendung als Künstler und Mensch Entfaltung und Aufstieg haben bringen können. Ohne eine andere Sprache, als die seines Volkes zu sprechen, war er nach Wien gekommen. Seine Gönner und Freunde bemühten sich hier, ihm die Vorbildung zur Aufnahme an unserer Akademie zuteil werden zu lassen. Der Wiener Bildhauer König, der darum angegangen wurde, gab erst seine Bereitschaft hiezu, als er das verlangende, aus reichen Tiefen des Inneren kommende Brennen in den Augen des Jünglings sah. Dann kam die Schulung bei Hellner an unserer Akademie, die im Grunde nicht mehr sein konnte, als die klare Heranführung seines Ichs an die Wesenheiten seines Talentes. Wenn er dann auch noch, trotz seiner immer eigenwilliger hervorbrechenden künstlerischen Kräfte, sich einer Ausbildung bei Professor Bitterlich unterzogen hat, so scheint er damit freiwillig eine Beengung auf sich genommen zu haben, die ihn nur noch mehr zu sich selbst hatte bringen können.

Schon am Ende des ersten Jahres seiner Schulzeit bei Hellner stellte er Werke seiner Hand in der Sezession aus. Sie brachten ihm die Zustimmung der Künstlerschaft, aber keinen Verdienst. Mit Neben- und Kopistenarbeiten erwarb er sich über karge Unterstützungen durch seine Landsleute hinaus, die zum Leben und eigenen Schaffen notwendigen Mittel, bis er endlich im fünften Jahre seines Wiener

[illegible]

[illegible] 1910 eine Kollektivausstellung seiner Werke in der Sezession in Wien, die dem Meister einen großartigen Erfolg eintrug.

Im Pavillon, den der serbische Staat errichtet [illegible]

[illegible]

Zeit des letzten Krieges brachte auch ihm schweres Leid und hartes Los. Zum zweiten Mal mußte er seine heißgeliebte Heimat verlieren, um schließlich in den Vereinigten Staaten von Nordamerika eine Schaffensstätte in der Universität Syracuse zu finden.

Was Mestrovic als Künstler für die Welt bedeutet, darüber hat die Welt selbst ihr Urteil gesprochen. Die Wiener Akademie hat mit der Verleihung der Ehrenmitgliedschaft an Ivan Mestrovic nicht nur ihrem Stolz Ausdruck verleihen wollen, daß er als Schüler unserer Anstalt mit seiner Kunst den Weg zu Größe und Ruhm angetreten hat und Wien es gewesen war, wo ihm die erste, große Anerkennung seines Schaffens zuteil geworden ist, sondern daß sie auch von Bewunderung erfüllt ist für die seltenen menschlichen Werte, die in seiner Persönlichkeit zu zwingender Größe vereinigt, vor uns stehen.

Von dem brennenden Pulsschlag seines künstlerischen Herzens, der ihn von Erfolg zu Erfolg getragen hat, ist sein menschliches Herz rein und unberührt in seiner schlichten, tiefen Einfachheit geblieben. Sein Glauben an die Menschen und die Welt, die so oft seinem nach Großem und Idealem dürstenden Geiste böse Wunden geschlagen haben, blieb mitleidvoll und stark. Aus solcher Glaubenstiefe konnte er einen Optimismus bewahren, der ihn für eine während des Krieges in der Schweiz erschienene Schrift den Titel wählen ließ: „Und dennoch wollen wir hoffen."

Aber nicht nur das Hoffen-Wollen ist ihm zum

Leitsatz geworden, sondern auch das Helfen Wollen, das dem ersteren Bekenntnis erst seinen wahren menschlichen Inhalt gibt.

Er hat es nicht vergessen, daß die kleine Ortschaft Otavice in Dalmatien keine Schule besaß, die seiner Kindheit den ersten Unterricht hätte geben können. Aus eigenen Mitteln hat er dort eine Schule errichten lassen. Auch der Anlage und [illegible] der Straßen in seinem Heimatbezirk hat er opferbereit seine Fürsorge geschenkt.

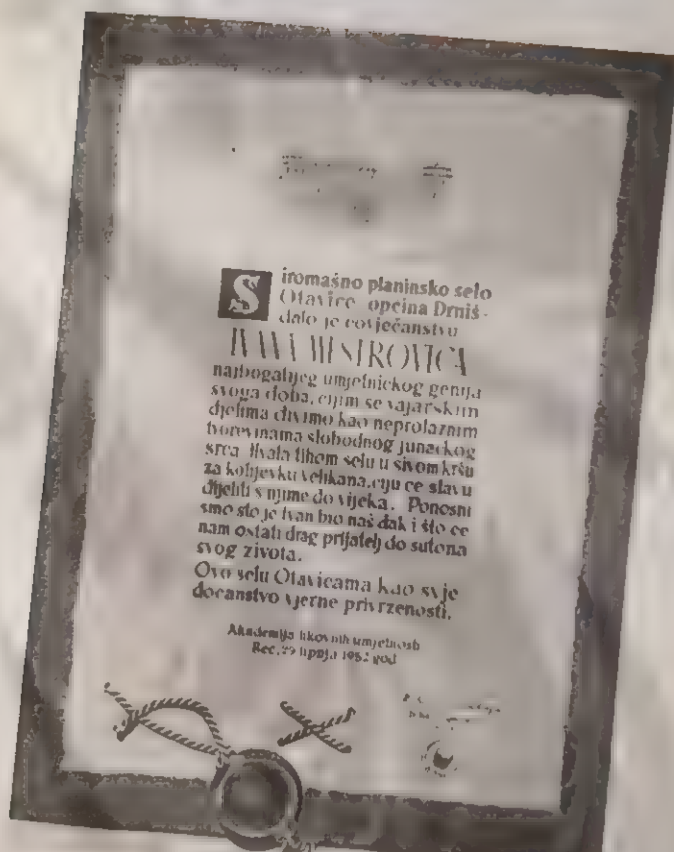
Es ist ein kleiner Zug seines großen liebenden Herzens, als er, um einer in angstvollem Flattern an die Fenster seines Ateliers stoßenden Schwalbe zum Weg in die Freiheit zu verhelfen, so unbekümmert und mit vollem Einsatz seines Mitgefühls für das kleine Tier zu Werke ging, daß er sich dabei selbst die Hand brach.

Stets bedacht, der Heimat und ihren Menschen dort zu helfen, hat er veranlaßt, daß der Guß seiner für Chicago bestimmten Indianer-Denkmäler in der Gießerwerkstätte der Zagreber Akademie durchgeführt wurde. Und jetzt, wo er daran ist, dem Staat New York ein großangelegtes Gedenkmonument für die Opfer des Weltkrieges, für das die israelitische Gemeinde von New York die Geldmittel zur Verfügung gestellt hat, zu erschaffen, ist er dafür eingetreten, daß die Steine zum Unterbau des großen Denkmals, das die in Erz gegossene Kolossalstatue des Moses tragen soll, in jugoslawischen Steinbrüchen

gebrochen werden, um nicht nur für mehr Arbeit und Brot in seiner Heimat zu sorgen, sondern es auch zu erreichen, daß jugoslawische Schiffe es sind, die diese Lasten über das Meer führen sollen.

Auch die Wiener Akademie hat von seiner immer gebenden Hand ein wertvolles Geschenk erhalten: Ein Selbstbildnis, das in der Gießerwerkstätte der Zagreber Akademie in Bronze gegossen wurde. Daß diesem großen und kostbaren Geschenk auch die letzte in Amerika erschienene Monographie über das Lebenswerk des Meisters Ivan Mestrovic beigefügt wurde, geben mir doppelten Anlaß, ihm im Namen der Akademie für beides nochmals öffentlich den aufrichtigsten und freudigsten Dank auszusprechen.

Es hat uns mit froher Hoffnung erfüllt, als wir hörten, daß Ivan Mestrovic zu dieser Feier persönlich nach Wien kommen wolle. Arbeitsverpflichtungen aber haben ihn in letzter Stunde verhindert, dieses sein Vorhaben auch tatsächlich zur Ausführung zu bringen. So kann ich ihm also nur im Namen der Akademie unsere innigsten Grüße der Verbundenheit senden und ihm zu dem bisherigen Schaffen seines Lebens unsere Glückwünsche übermitteln, die aus der gleichen Gesinnung kommen, wie die es ist, die er in einem seiner Briefe an die Akademie zum Ausdruck gebracht hat: „Meine Studien an ihrer Akademie“, schreibt er darin, „sowie mein Aufenthalt in Wien sind mir in unvergeßlicher und angenehmer Erinnerung geblieben. Meine Überzeugung



Siromašno planinsko selo Otavice općina Drniš dalo je čovječanstvu

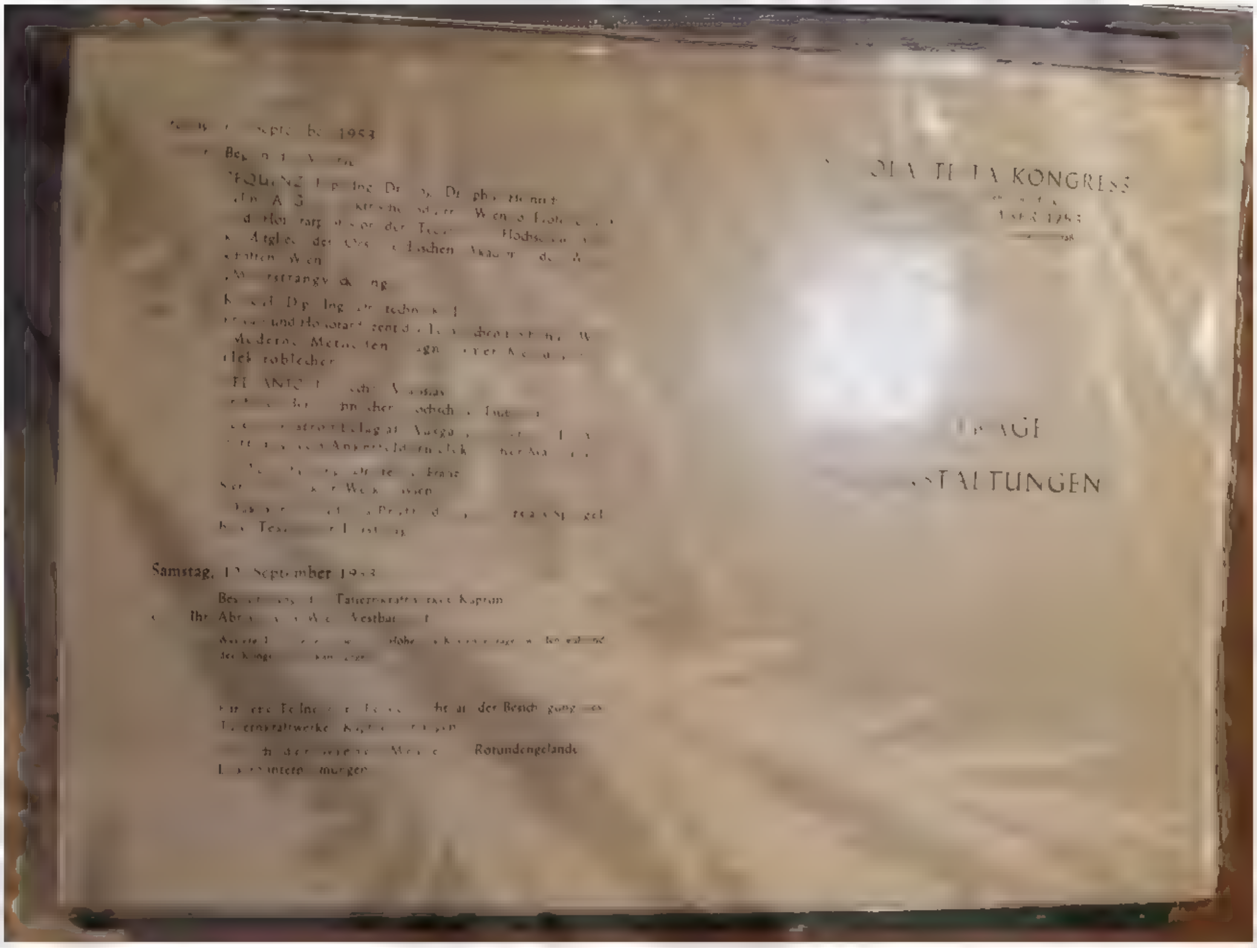
IVANA MEŠTROVIĆA

najbogatijeg umjetničkog genija svoga doba, čijim se vajarskim djelima divimo kao neprolaznim tvorevinama slobodnog junačkog srca. Hvala tihom selu u sivom kršu za kolijevku velikana, čiju će slavu dijeliti s njime do vijeka. Ponosni smo što je Ivan bio naš đak i što će nam ostati drag prijatelj do sutona svog života.

Ovo selu Otavicama kao svjedočanstvo vjerne privrženosti.

Akademija likovnih umjetnosti
Beč, 29 lipnja 1952 god.

Ehrenurkunde der Akademie der bildenden Künste in Wien für den Geburtsort Ivan Meštrović


KONGRESS
Samstag,
September
Rotundengelände

Sonntag [illegible] September 1953

[illegible] Eröffnung der [illegible] Konferenz

MATANOVIC, Dr. Ing. Drago

[illegible] maßnahmen in [illegible] Niederspan[illegible]

[illegible] der Österreichischen Bundesbahnen [illegible]

[illegible] Stromversorgung von [illegible]

[illegible] Technischen Hochschule [illegible]

[illegible] Wanderst[illegible] von [illegible]

[illegible] September

[illegible] Vor[illegible]

[illegible] Dr. [illegible]

Professor der Technisch[illegible]

[illegible] Hochfrequenz[illegible]

[illegible] Permeab[illegible]

Siemens & Halske [illegible]

„Fernwirkeinrichtungen [illegible]

JELLINEK, Dr. Stefan

o. Professor der [illegible]

„Der elektrische [illegible] skopischen Bildern.

[illegible]

[illegible] Kabel [illegible]

Mittwoch, 9. September 1953

[illegible] Beginn [illegible] Vorträge

[illegible] der Zentralanstalt für Meteorologie [illegible]

[illegible] eines modernen Radio[illegible]

MATANOVIC, Dr. Ing. Drago

Professor [illegible] Technischen Hochschule [illegible]

[illegible] Kompensierung der [illegible]

[illegible] A. G. für elektrische Industrie, Wien

„Die Entwicklung des österreichischen Elektro-Schwermaschinenbaues nach 1945 [illegible] der ELIN auf allen Gebieten

14 Uhr [illegible] Verbundwerk [illegible]

Abfahrt mit Autobus um [illegible] Uhr vom Technischen Museum

Anschließend Besichtigung der Burg Kreuzenstein

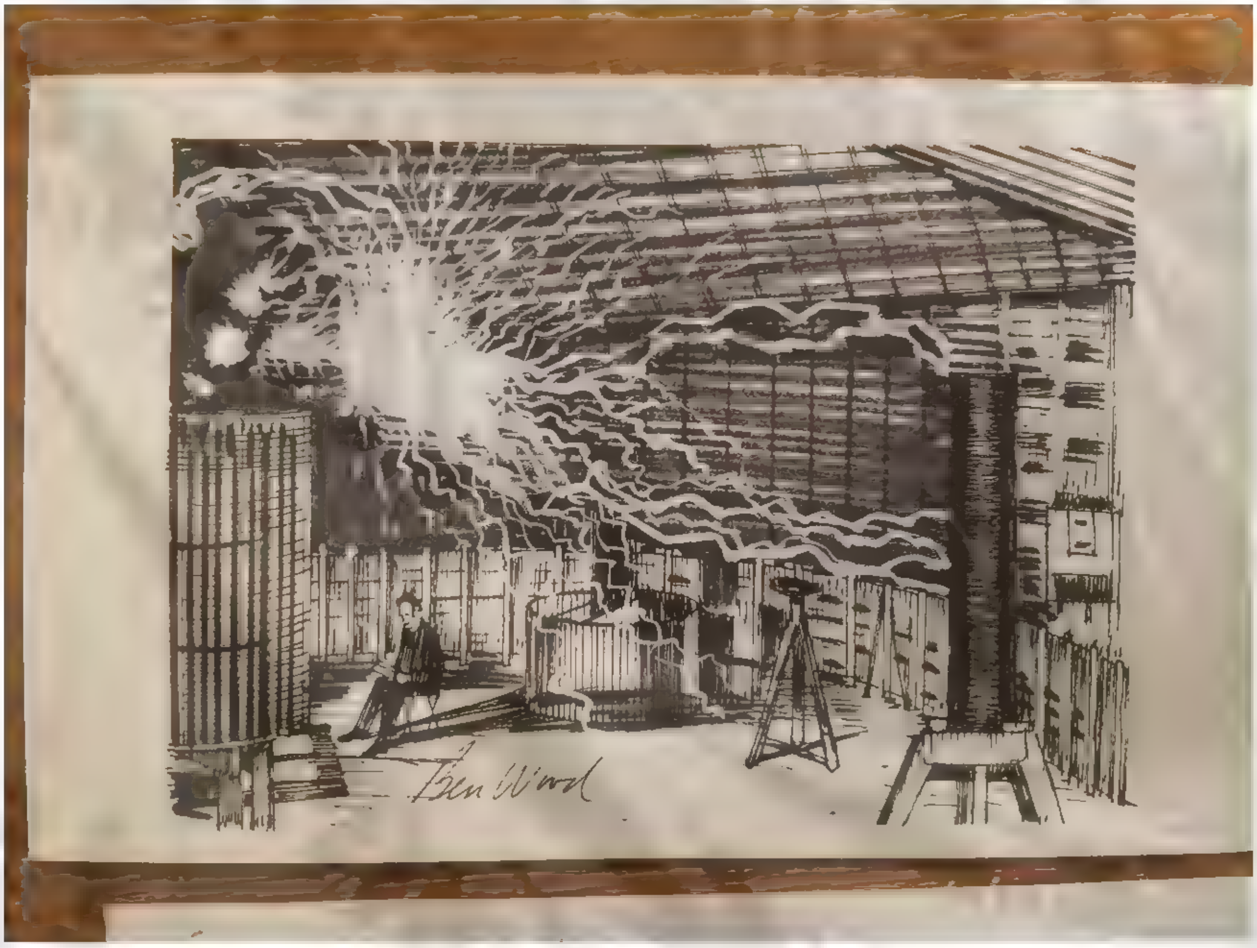
Donnerstag, 10. September 1953

[illegible] der ELIN-Werke in Weiz

[illegible] Südbahnhof

[illegible] der „Elin"-Werke

[illegible]


Ben Ward

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May 8, 1979

Mr. Lee Anderson
2525 South Meade Street
Denver, Colorado 80219

Dear Mr. Anderson:

Replying to your letter of April 25th, while we did not have any special prints made of Nikola Tesla drawing, I am happy to enclose our artist's original drawing.

Cordially,

Publisher

Great Moments in Communication

IT IS 1899 and in his laboratory in Colorado Springs Nikola Tesla studies his not
concerning a dramatic demonstration in which he allows powerful bursts of artifici
lightning to pass harmlessly through his body. Two years ago Tesla announced
polyphase system of alternating current power transmission based upon his discove
of the rotating magnetic field principle. He is now working on a number of commu
cations and lightning inventions.

word processors. Today's LSI technology means the intelligence may be distributed in your telephone, the transmission line, PBX, central office switch, computer or other terminal—in short, at any place or in several places in the telecommunications network, wherever it's most desirable, as long as someone is planning the integration . . . It is easy to view computers and telecommunications as discrete worlds, sharing some commonalities like LSI chips and software, but nevertheless only welded together at some places here and there. That is why I have some reservations about the phrase "compunications"; it reinforces this [illegible]

fibers are invading other aspects
communications, such experien
can come none too soon. But m
significantly, once the broadcasti
industry has taken the fiber opt
plunge, there opens a brand n
portal through which one can tra
to an entirely new realm of inform
tion and entertainment services, a
you don't have to be Alice in W
derland to appreciate the magnitu
of what lies beyond. This new wo
is the world of broadband commu
cations, where fibers and lasers a
computers and satellites all co
together to perform a wealth
new communications tasks, an
wholeheartedly believe that
[illegible]

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Between 3rd and 4th **Opp Phelan Building**

An Electrical Exhibition of startling and brilliant phenomena never before shown to the public.

The [illegible] years o[illegible] the nineteenth century are witnessing the most remarkable advance [illegible] man's mastery over the mysterious powers of nature that the [illegible] ever seen A new agent [illegible] been captured and is [illegible] rapidly trained to do the work of the world

Electrika Tesla

Admission - 10 cents

767 MARKET ST.

Between 3rd and 4th Opp. Phelan Building

An Electrical Exhibition of startling and brilliant phenomena never before shown to the public.

The closing years of the nineteenth century are witnessing the most remarkable advance in man's mastery over the mysterious powers of nature that the human race has ever seen. A new agent has been captured and is being rapidly trained to do the work of the world.

Electricity the most subtle, mysterious and powerful force known to man is being [illegible] in every department of life. The laboratory experiments of [illegible] years ago have been developed into the great [illegible] and [illegible] of today, and the [illegible] experiments [illegible] are the [illegible] of [illegible]. The [illegible] of the present [illegible] in the near future we will see [illegible] of electricity [illegible] anything that we can [illegible]. In the electrical exhibition that is now open at 767 Market Street the aim has been to show to the public a number of the most interesting experiments known to electrical science.

These experiments are not alone interesting on account of the insight that they give into the future development of electricity, but are also brilliant and wonderful in themselves far beyond anything that the public has ever seen.

Bars of iron are instantly turned white hot and melted by immersion in a dish of water.

Glass tubes held in the hand glow with light without heat.

Water is [illegible] in a dish resting on a piece of paper and the paper remains unscorched.

Incandescent lamps light up when held in the air disconnected from all wires.

The electric pencil writes in letters of fire on a sheet of iron, and melts the iron as a hot poker would melt wax.

Electrical music is produced by an ordinary coal oil can held in the air.

The marvelous experiments with which Nikola Tesla disturbed the [illegible] the world are reproduced. These are [illegible] the most [illegible] and brilliant phenomena that have [illegible].

[illegible] any one attending the exhibition [illegible] to establish the truth of this statement to his own satisfaction.

The exhibition is one that women and children can attend without escort as nothing objectionable is allowed and attendants are always at hand to look after the guests and explain the apparatus.

New apparatus is constantly being constructed in the laboratory of the company and will be put on exhibition as fast as it is perfected.

The rooms are open from 10 to 5 and 7 to 11.

767 MARKET STREET,

Between 3rd and 4th Opposite the PHELAN BUILDING

Admission, - - 10 cents

Children Half Price


Souvenir DT.


FILM CONSORTIUM
TESLA
PROJECT

Dave Archer's paintings have been featured in **OMNI** MAGAZINE and are now appearing on the popular PARAMOUNT PICTURES TV Show, **"Star Trek, The Next Generation."** His amazing technique of painting space on glass with a million volts of electricity has been featured on over 150 TV Shows. He has recently been honored with the first one man show in the history of **Hayden Planetarium** in Central Park in New York. The show will run through June of 1991.

PRE-PUBLICATION OFFER

"Starry Haven" is a limited edition of 650 photo offset lithographic reproductions from an original reverse glass painting by Dave Archer. It is printed on heavy, 120 lb., acid free, *Brilliant Art Gloss Cover* paper. There are no artists proofs. The image size is 19¾" x 32" with a 2" white border. (Full paper size is 23¾" x 36") The print is signed and numbered above the white border to allow for matting off the border. A Certificate of Authenticity will be sent with each reproduction.

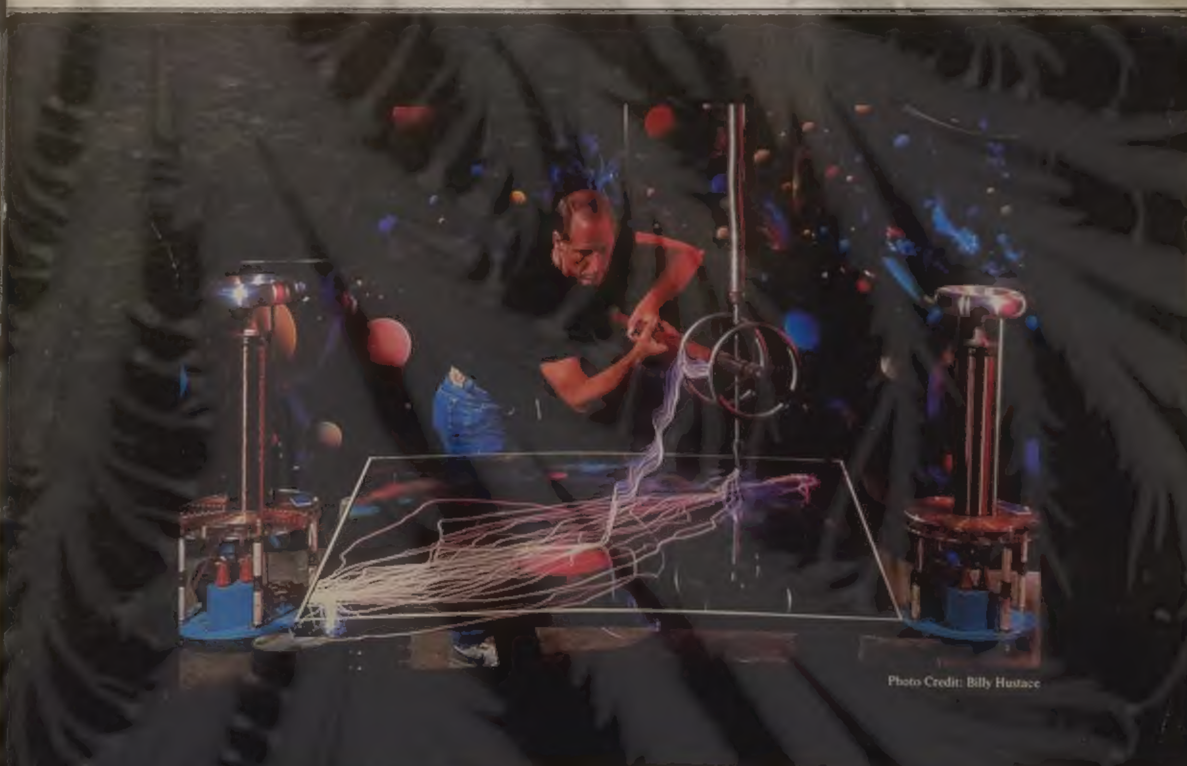

Photo Credit: Billy Hustace


New Release “Starry Haven” by Dave Archer
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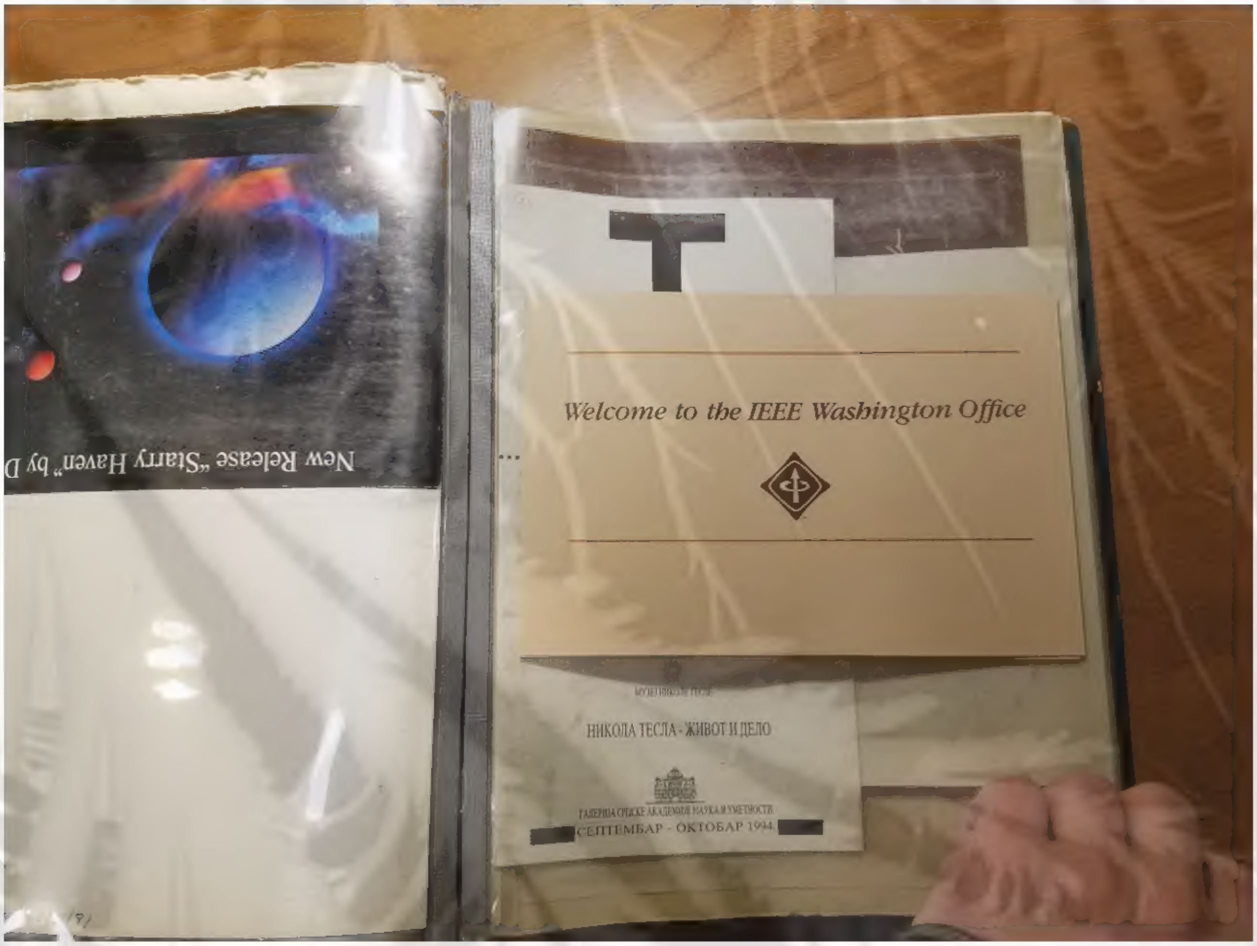

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СЕПТЕМБАР - ОКТОБАР 1994